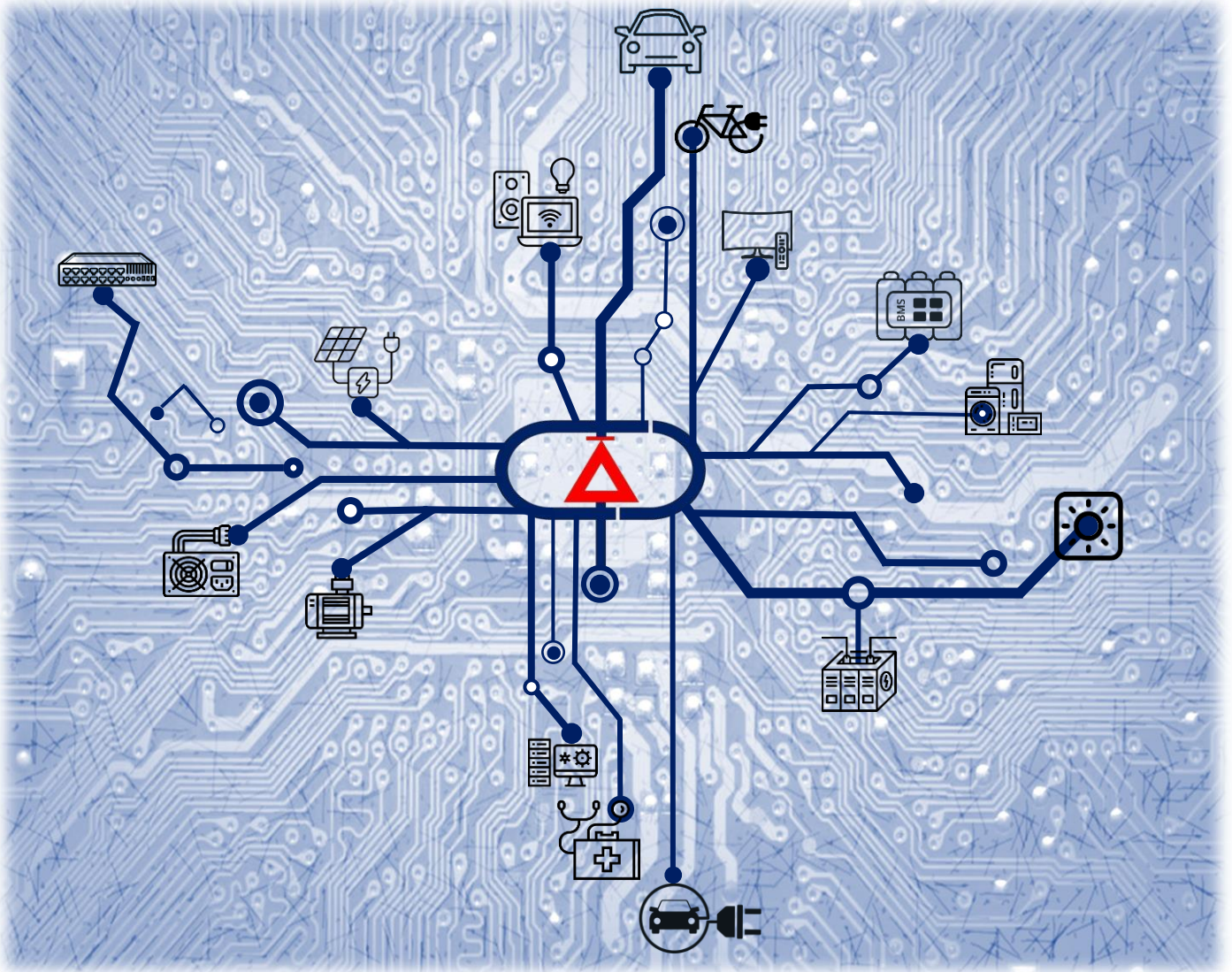


# ALPINESEMI™

*beyond boundaries...*

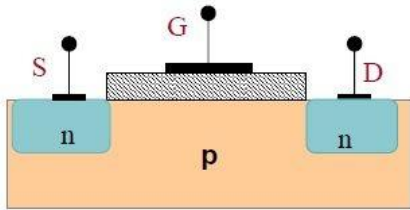


## MOSFET

(Metal Oxide Semiconductor Field Effect Transistor)

### Short Form Catalogue

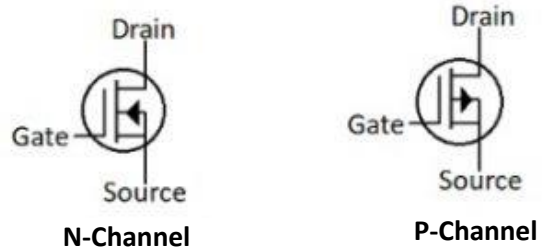
**MOSFET:** The MOSFET (Metal Oxide Semiconductor Field Effect Transistor) transistor is a semiconductor device that is widely used for switching purposes and for the amplification of electronic signals in electronic devices. A MOSFET is either a core or integrated circuit where it is designed and fabricated in a single chip because the device is available in very small sizes. The introduction of the MOSFET device has brought a change in the domain of switching in electronics.



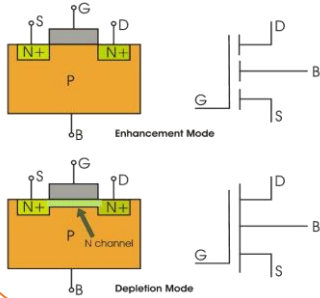
**CONSTRUCTION:** A MOSFET is a four-terminal device having source (S), gate (G), drain (D) and body (B) terminals. In general, The body of the MOSFET is in connection with the source terminal thus forming a three-terminal device such as a field-effect transistor. MOSFET is generally considered as a transistor and employed in both the analog and digital circuits

## A MOSFET can function in two ways

- Depletion Mode
  - N-Channel Depletion MOSFET
  - P-Channel Depletion MOSFET
- Enhancement Mode
  - N-Channel Enhancement MOSFET
  - P-Channel Enhancement MOSFET



### N-Channel MOSFET

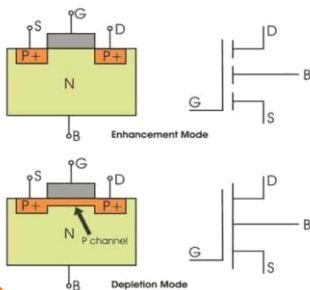


The drain and source are heavily doped N+ region and the substrate is p-type. The current flows due to the flow of negatively charged electrons and that's why known as n-channel MOSFET.

When we apply the positive gate voltage, the holes present beneath the oxide layer experience repulsive force, and the holes are pushed downwards into the bound negative charges which are associated with the acceptor atoms.

The positive gate voltage also attracts electrons from the N+ source and drain region into the channel thus an electron-rich channel is formed.

### P-Channel MOSFET



The drain and source are heavily doped p+ region and the substrate is in n-type. The current flows due to the flow of positively charged holes, and that's why known as p-channel MOSFET.

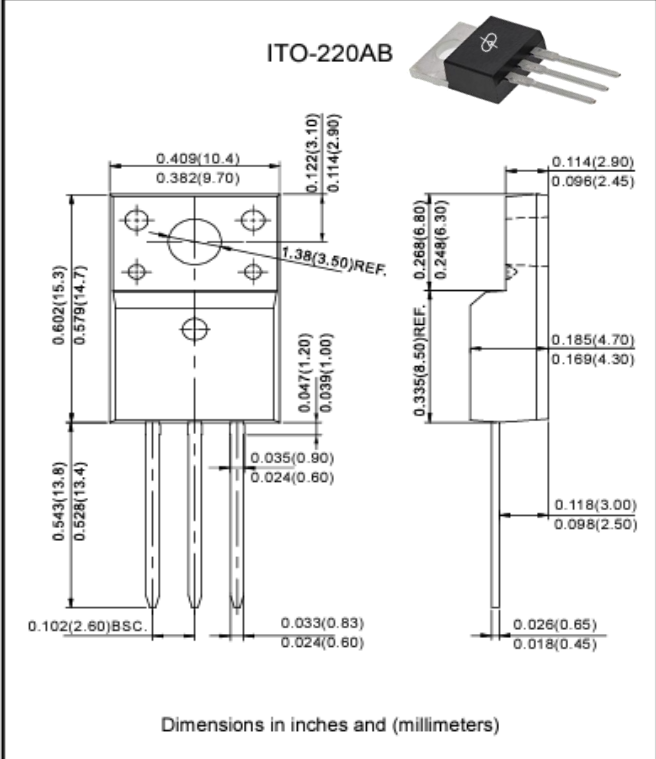
When we apply negative gate voltage, the electrons present beneath the oxide layer experience repulsive force and are pushed downward into the substrate, the depletion region is populated by the bound positive charges which are associated with the donor atoms.

The negative gate voltage also attracts holes from the P+ source and drain region into the channel region.

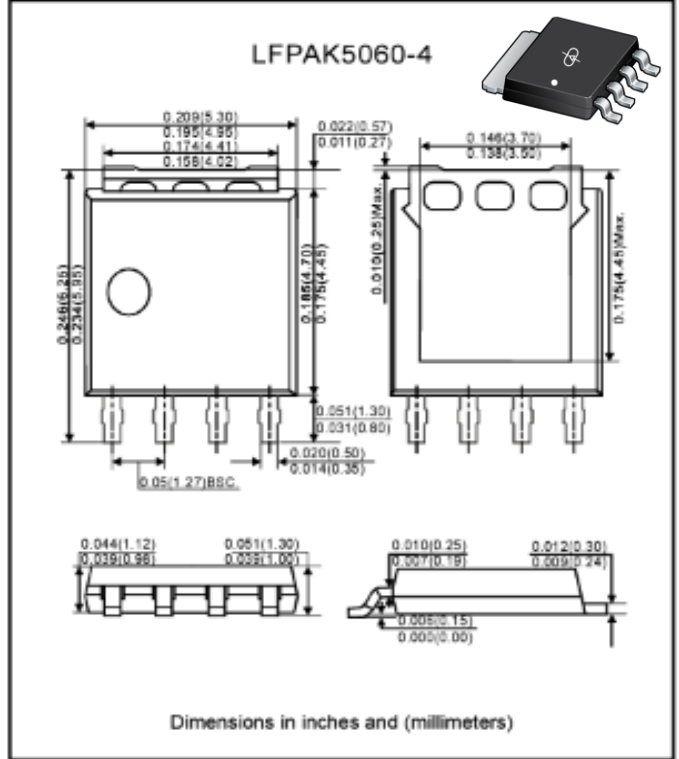
## MOSFET can also be used in multiple ways:

- MOSFET as a switch for LED
- MOSFET as a switch for Arduino
- MOSFET switch for ac load
- MOSFET switch for dc motor
- MOSFET switch for negative voltage
- MOSFET as a switch with Arduino
- MOSFET as a switch with a microcontroller
- MOSFET switch with hysteresis
- MOSFET as switch diode and active resistor
- MOSFET as a switch equation
- MOSFET switch for airsoft
- MOSFET as switch gate resistor
- MOSFET as a switching solenoid
- MOSFET switch using an optocoupler

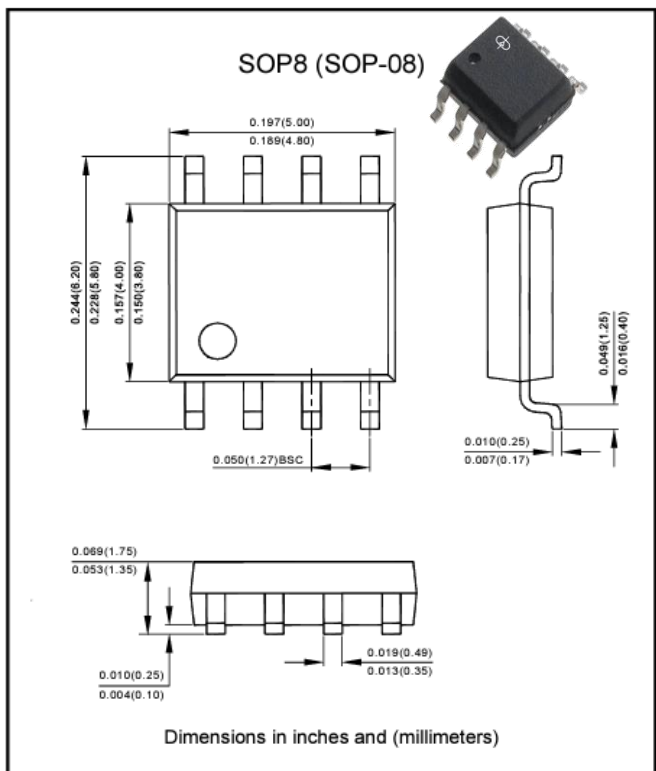
## ITO-220AB



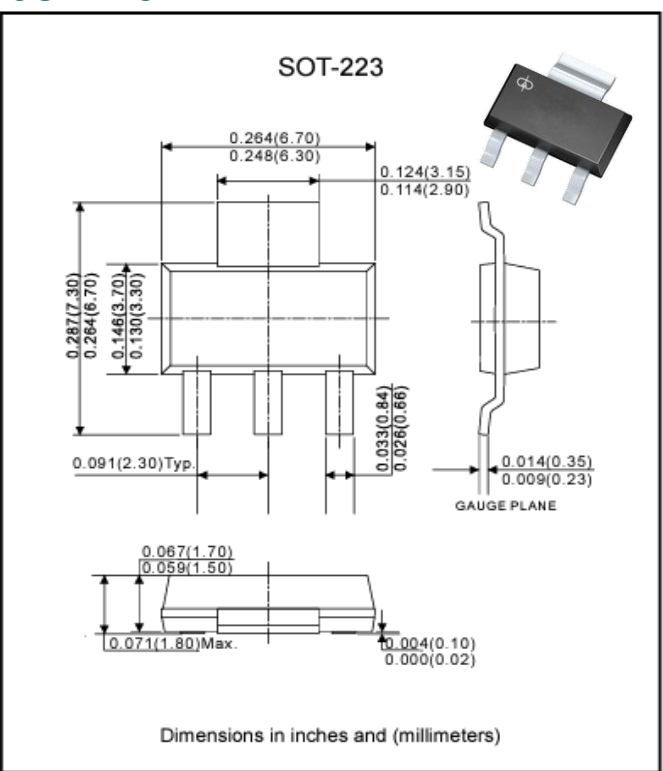
## LPAK5060-4



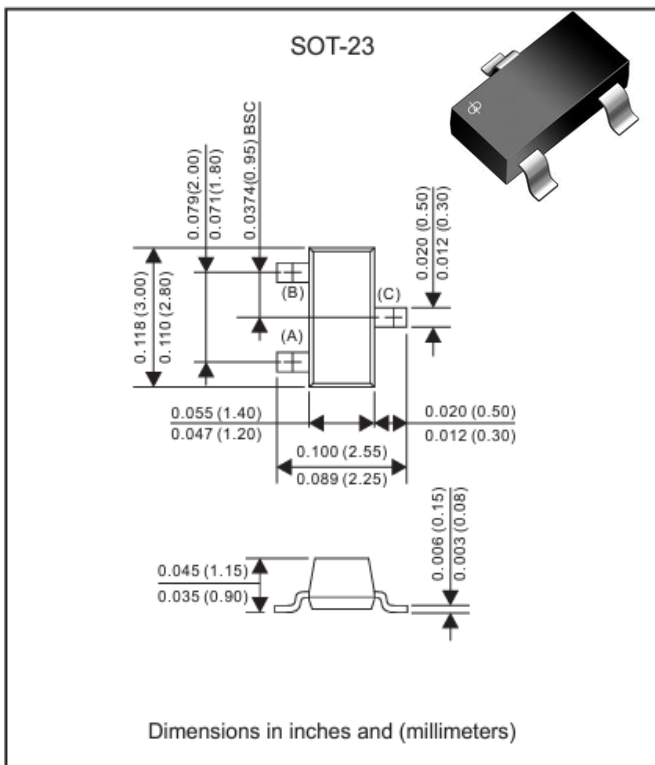
## SOP-08



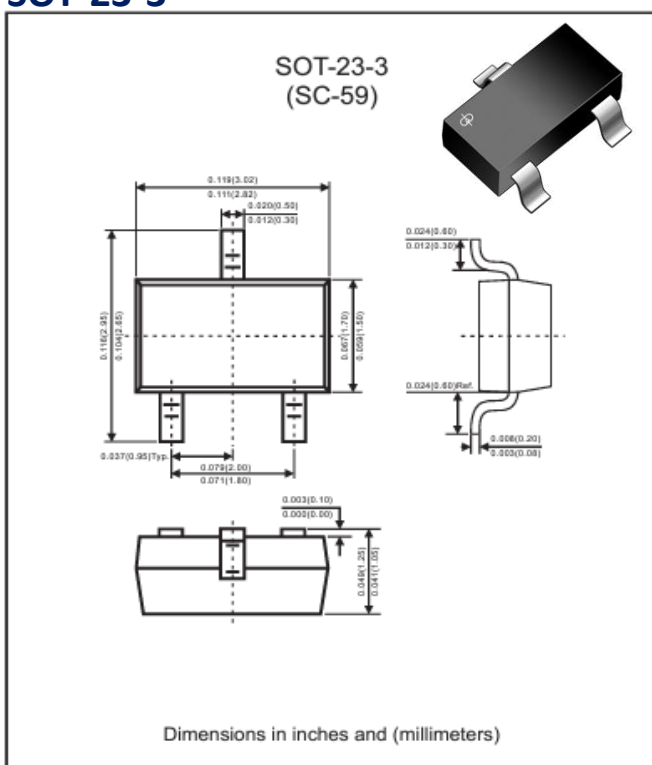
## SOT-223



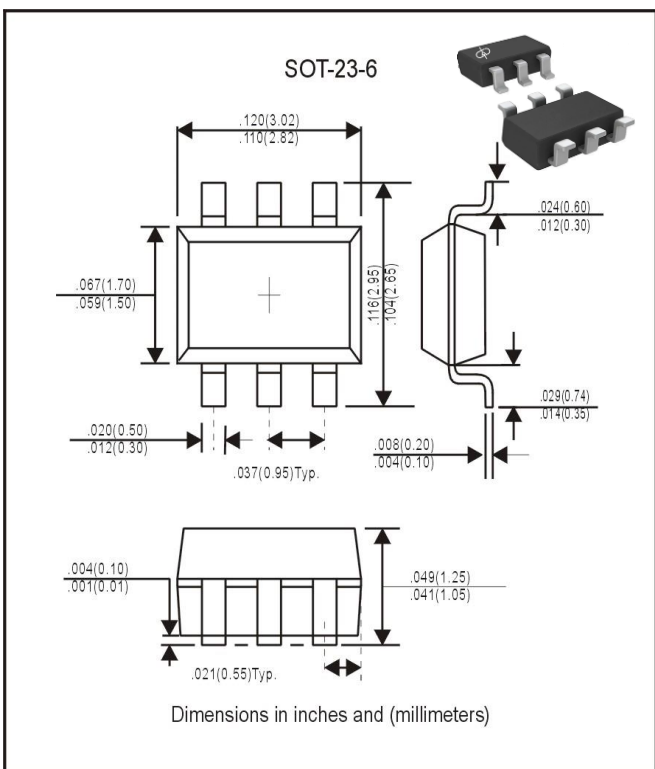
## SOT-23



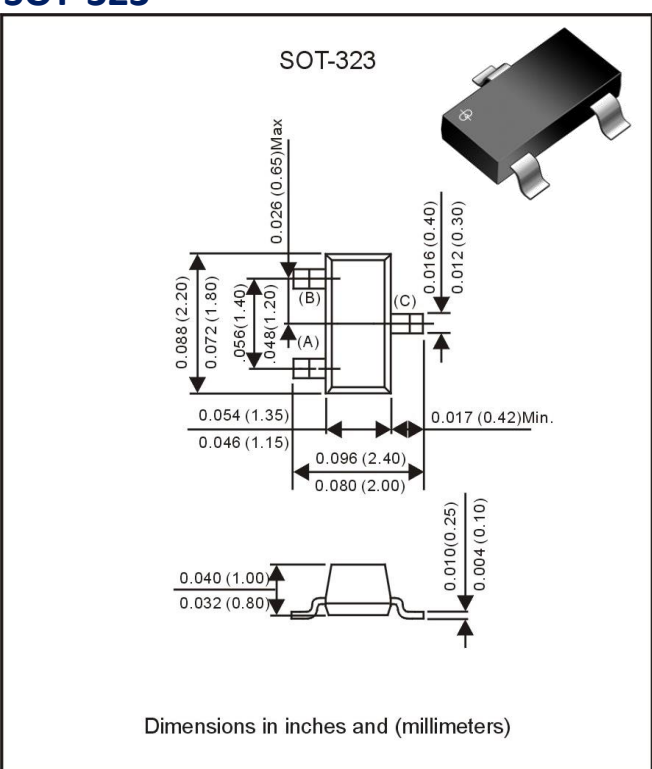
## SOT-23-3



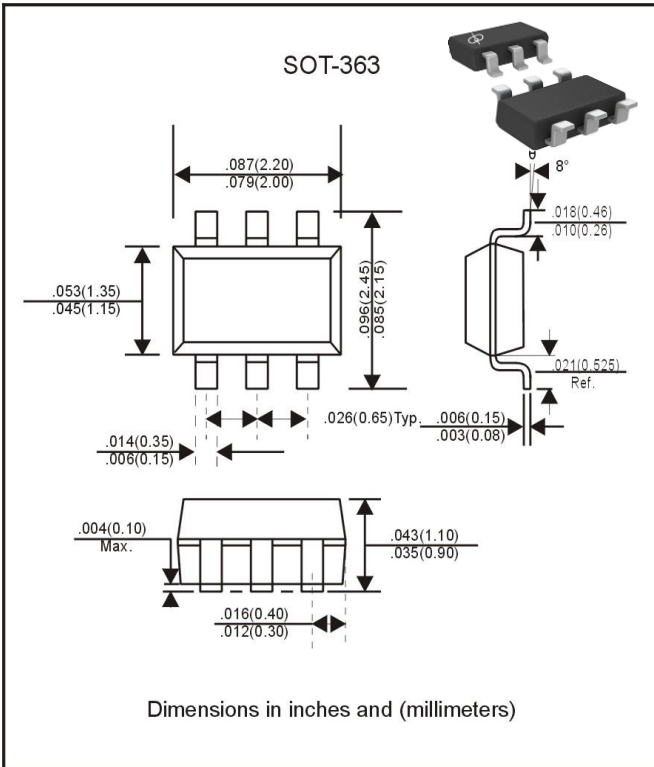
## SOT-23-6



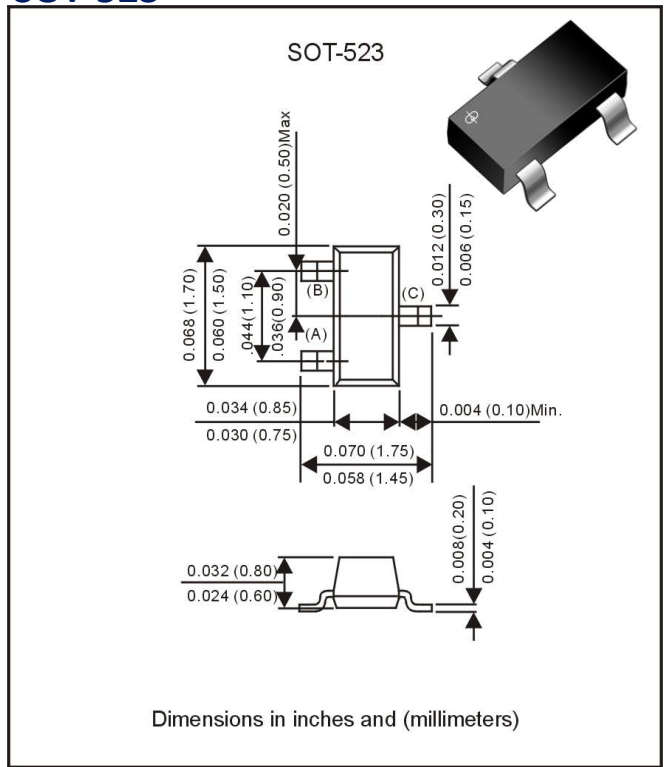
## SOT-323



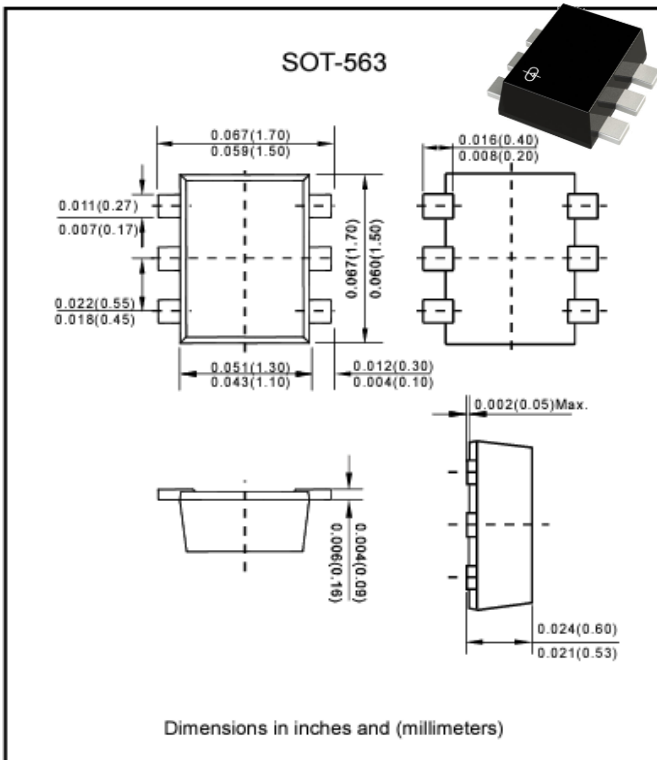
## SOT-363



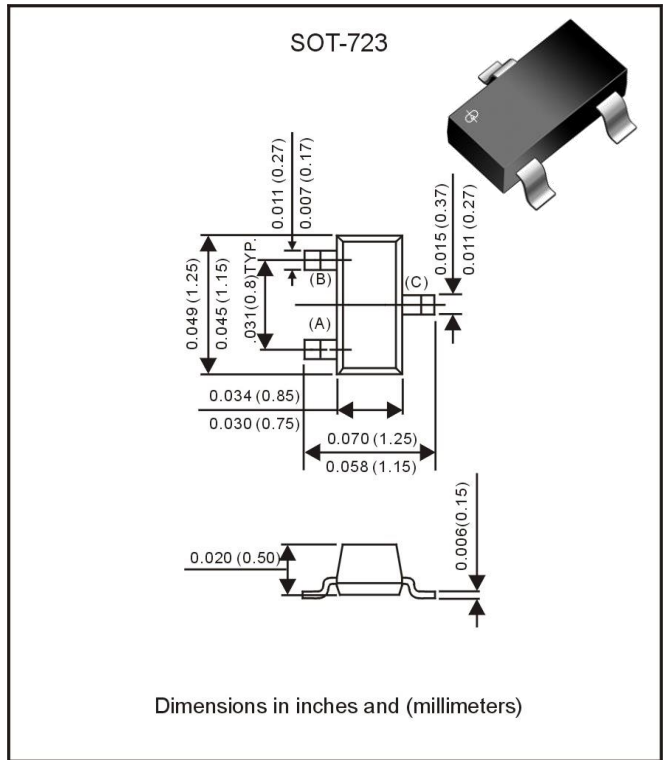
## SOT-523



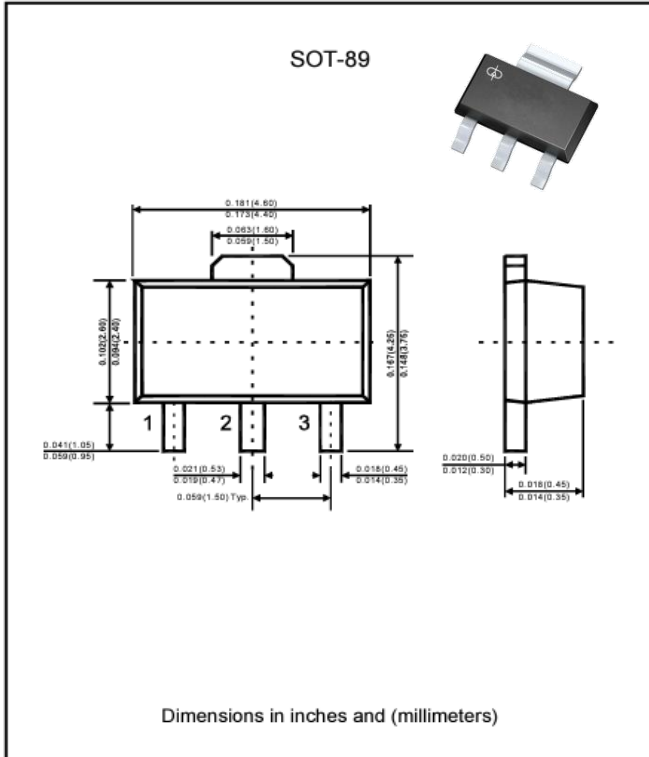
## SOT-563



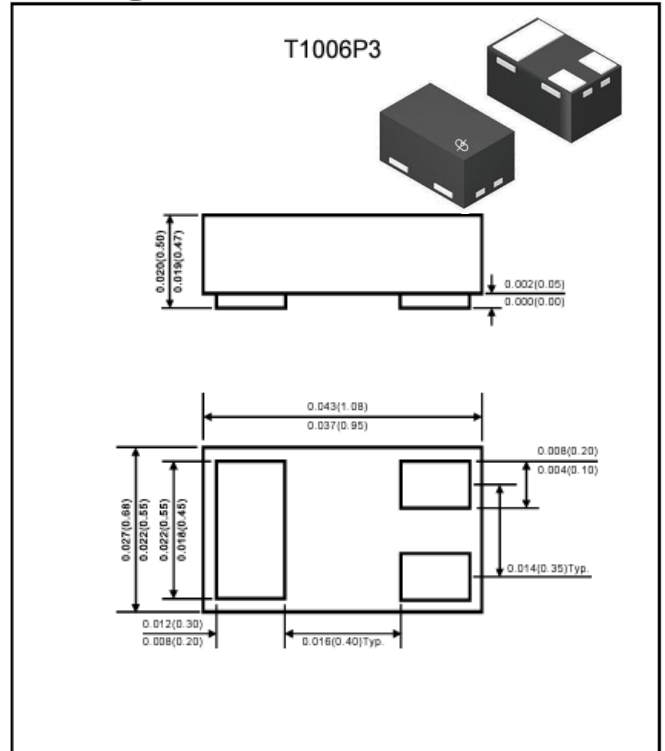
## SOT-723



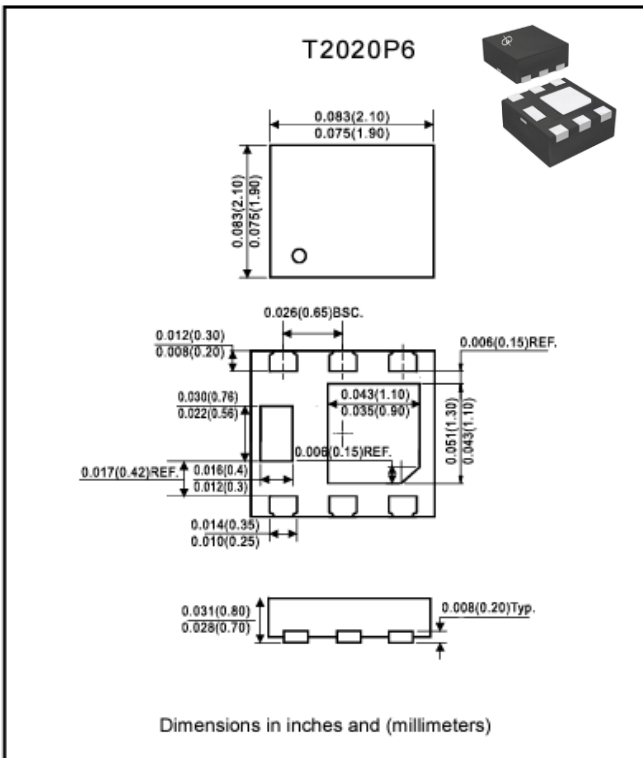
## SOT-89



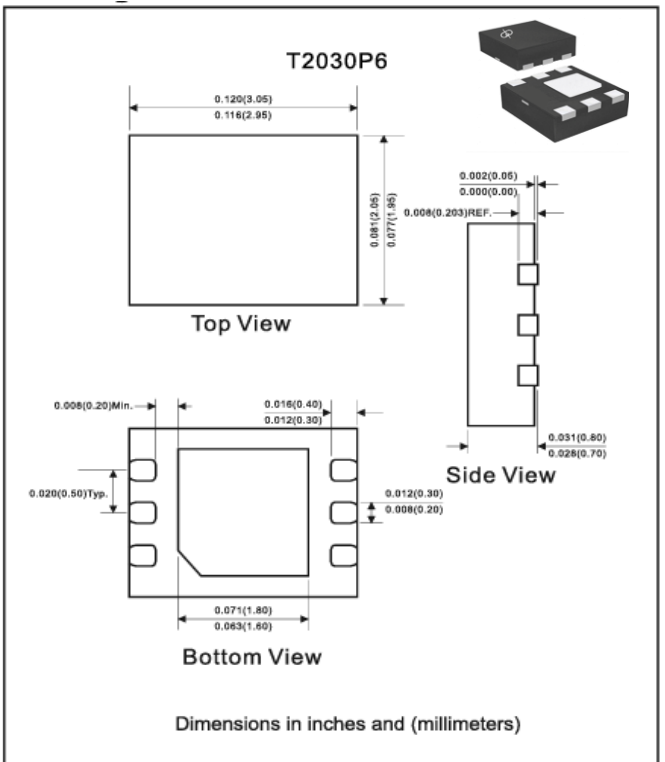
## T1006P3



## T2020P6

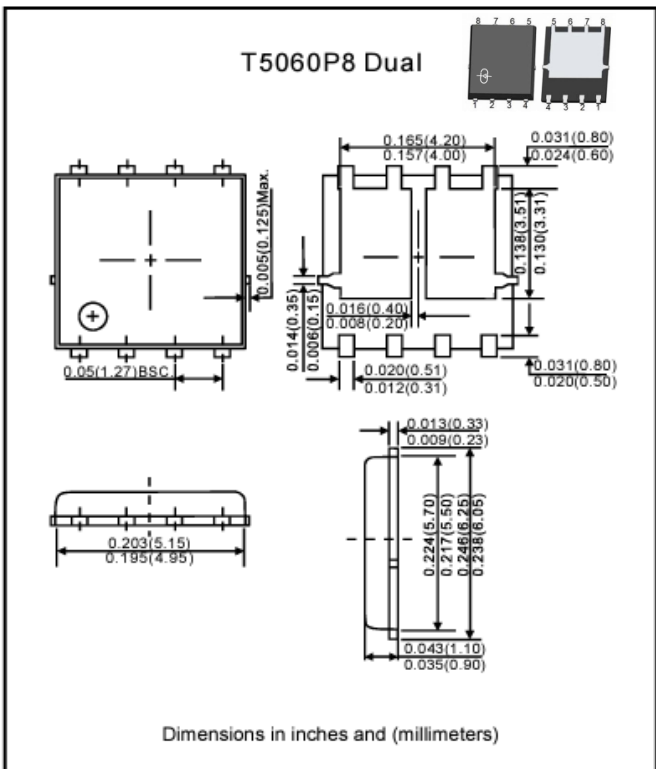


## T2030P6

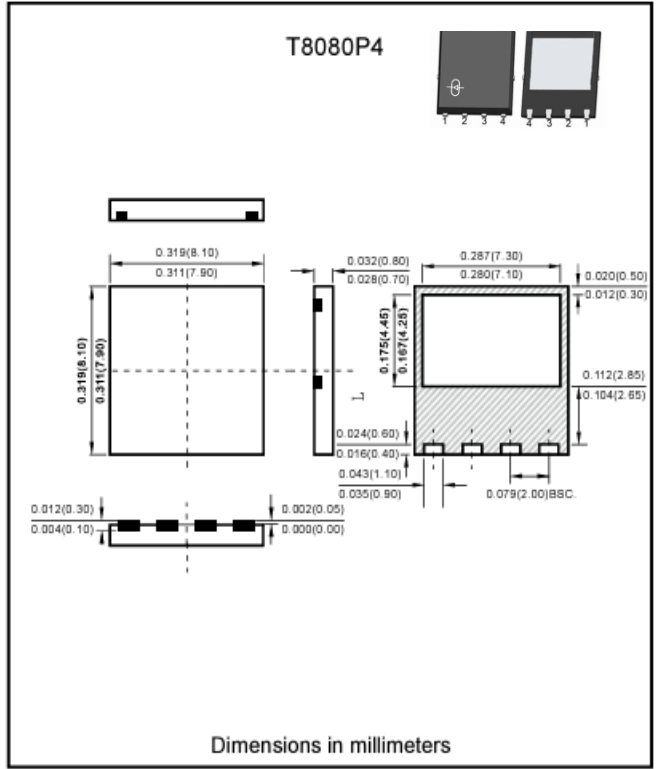




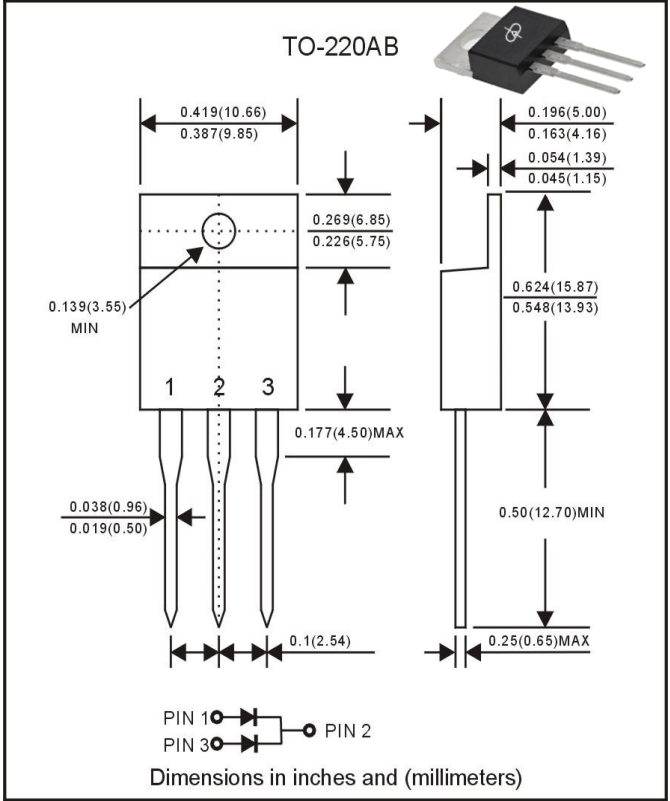
## T5060P8 Dual



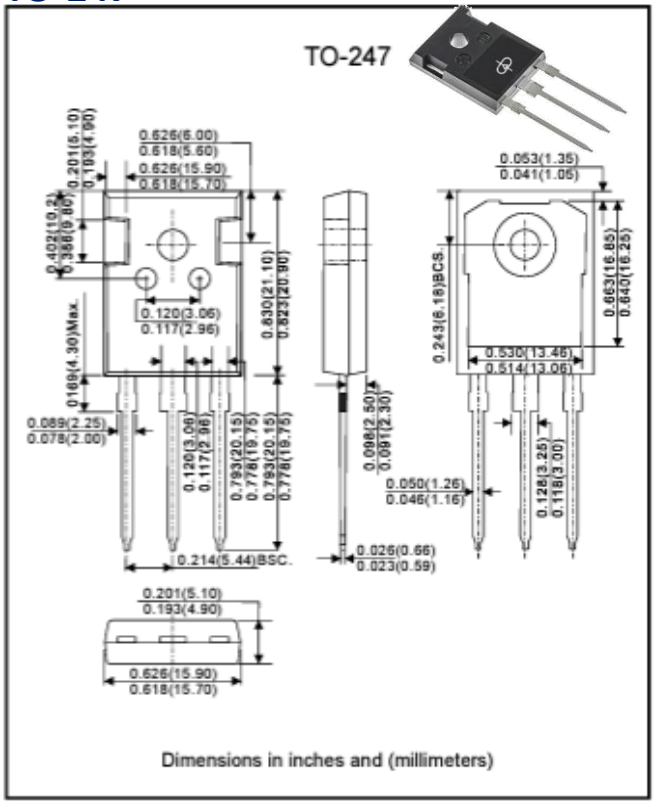
## T8080P4



## TO-220AB

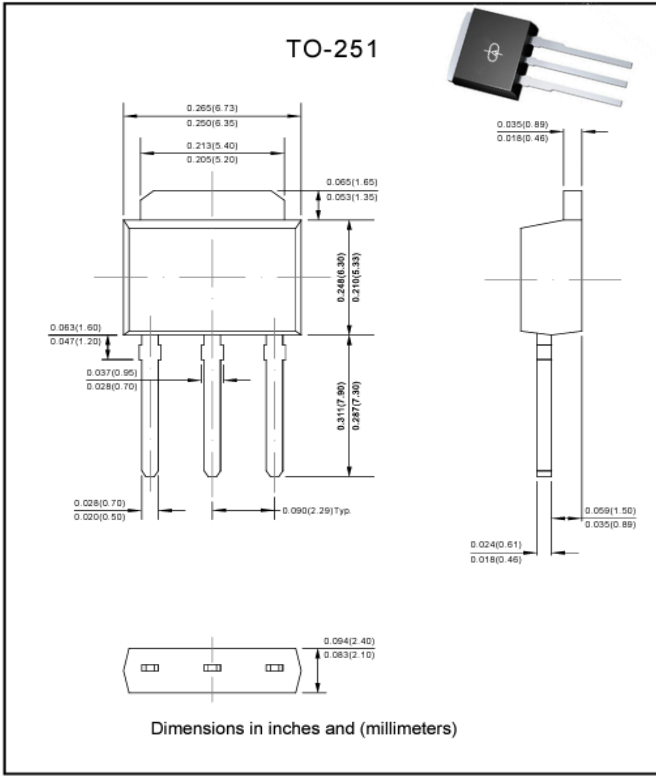


## TO-247

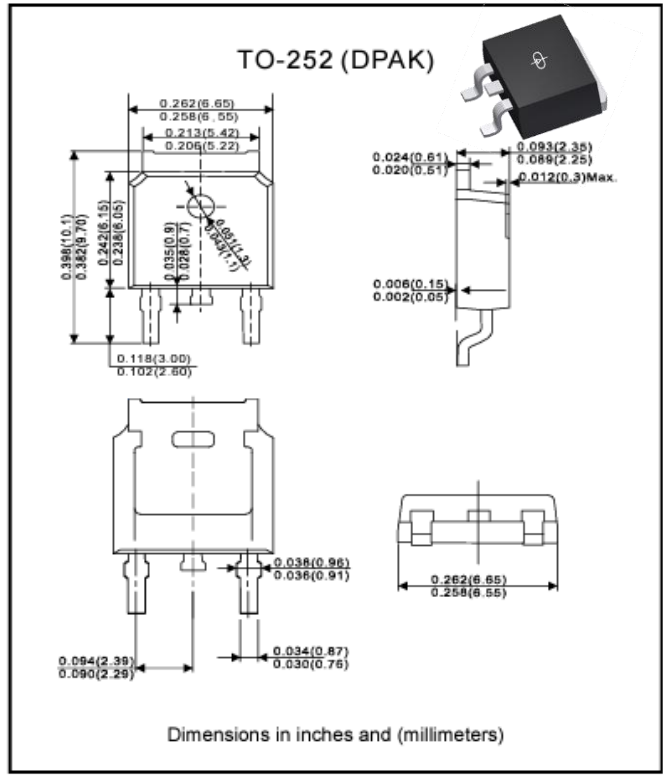




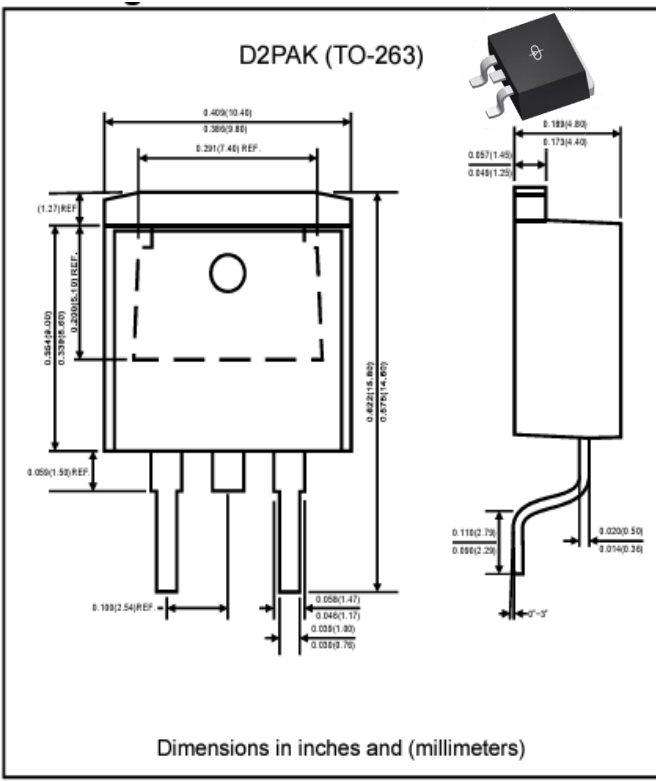
## TO-251



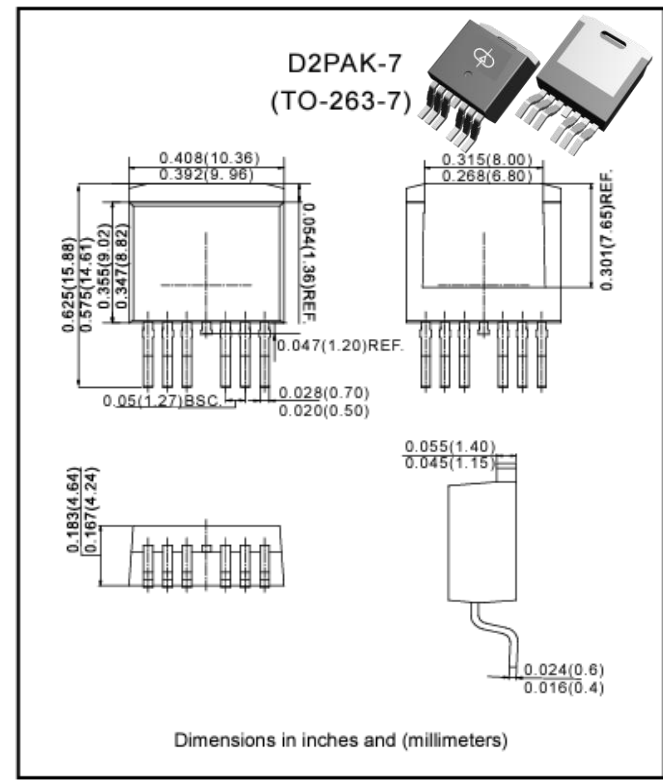
## TO-252



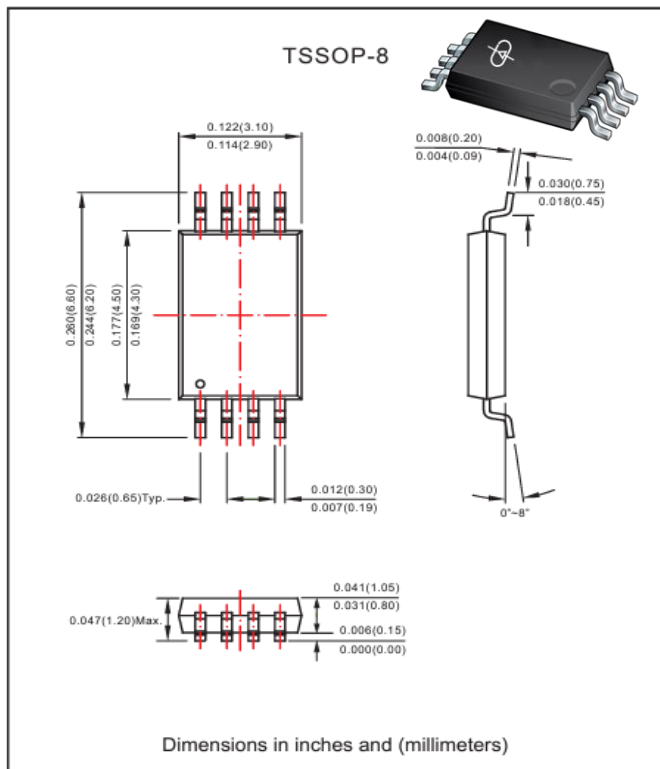
## TO-263



## TO-263-7



# TSSOP-8





beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSPF9640	-200	-11	38	13	-200	-100	±20	±0.1	2	4	0.25		0.5	-10	-6.6					1200	44	ITO-220AB	No	No
ALPSAC25P10	-100	-25	84	121	-100	-1	±20	±0.1	-1	-2.5	0.25	37m	46m	-10	-20	41m	53m	-4.5	-10	1704	34	T5060P8	No	No
ALPS01P10	-100	-1	0.5		-80	-0.1	±20	±0.1	-1	-2.5	-0.25		650m	-10	-1		700m	-6	-0.5		3.3	SOT-23	No	No
ALPSU46P06	-60	-46	89	182	-48	-1	±20	±0.1	-1	-3	-0.25	19.8m	25m	-10	-20	34m	44m	-4.5	-15	1713	26	TO-252	No	No
ALPSU30P06B	-60	-30	52.1	113	-48	-1	±20	±0.1	-1	-2.5	-0.25	21m	28m	-10	-10	25m	33m	-4.5	-8	3635	25	TO-252	No	No
ALPSAB24P06	-60	-24	42		-48	-1	±20	±0.1	-1.1	-2.5	0.25	34m	40m	-10	-8	38m	50m	-4.5	-5	2460	52.6	T3333P8	No	No
ALPSU23P06	-60	-23	83	75	-48	1	±20	±0.1	-1	-3	0.25	40m	50m	-10	-7	55m	72m	-4.5	-5	855	13.5	TO-252	No	No
ALPSD15P06	-60	-15	39	31	-60	-1	±25	±0.1	-1	-3	0.25		90m	-10	-15					1230	31	TO-251	No	No
ALPSU13P5P06	-60	-13.5	31.3	29.8	-48	-1	±20	±0.1	-1.2	-2.5	-0.25	80m	90m	-10	-3	100m	115m	-4.5	-2	1137	12.1	TO-252	No	No
ALPSQ6045	-60	-6.5	2.5		-48	-1	-20	-0.1	-1	-3	-0.25	55m	75m	-10	-5	70m	93m	-4.5	-3.6	456	9	SOP-08	No	No
ALPS2309B	-60	-4	1.4		-60	-1	±20	±0.1	-1.5	-3	-0.25		180m	-10	-2		280m	-4.5	-1	850	22	SOT-23	No	No
ALPST04P06	-60	-4	1.8	1.8	-48	1	±20	±0.1	-1	-3	0.25	95m	114m	-10	-3	100m	130m	-4.5	-2	930	8.5	SOT-223	No	No
ALPS03P06	-60	-3	2.5		-48	-1	±20	±0.1	-1	-3	0.25	120m	220m	-10	-3					540	13	SOT-223	No	No
ALPS002P06E	-60	-0.21	0.36		-48	1	±20	±10	-1	-2.5	0.25	3.55	4.3	-10	-0.1	3.8	5	-4.5	-0.1	30	-0.84	SOT-23	Yes	No
ALPS6041K	-60	-0.2	0.36		-48	-1	±16	±30	-1	-2.5	0.25	4	5	-10	-0.2	4.5	5.5	-4.5	-0.1	27.7	0.84	SOT-23	Yes	No
ALPSBSS84T	-50	-0.13	0.15		-50	-15	±20	±5	-0.9	-2	0.25	5.8	10	-5	-0.1					30		SOT-523	No	No
ALPBSS84W	-50	-0.13	0.225		-50	-15	±20	±10	-0.8	-2	-0.25	5	10	-5	-0.1					30		SOT-323	No	No
ALPSBSS84KW	-50	-0.13	0.225		-50	-15	±20	±10	-0.9	-2	-0.25		8	-10	-0.1		10	-5	-0.1	30		SOT-323	Yes	No
ALPBSS84	-50	-0.13	0.25		-50	-10	±20	-10	-0.8	-2	-1	5	10	-5	-0.1					30		SOT-23	No	No
ALPBSS84	-50	-0.13	0.25		-50	-10	±20	-10	-0.8	-2	-1	5	10	-5	-0.1					30		SOT-23	No	Yes



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub>	Max.	V <sub>GS</sub>	Max.	Min.	Max.	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Typ.			
ALPSU70P04	-40	-70	90	182	-40	-1	±20	±0.1	-1	2.5	0.25	7.1m	9.2m	-10	-30	9.3m	13m	-4.5	-20	7200	85	TO-252	No	No
ALPSU52P04	-40	-52	52	146	-40	-1	±20	±100	-1	-2.5	0.25		13m	-10	-18					3500	28	TO-252	No	No
ALPSU38P04	-40	-38	37	39	-32	-1	±20	±0.1	-1	-2.3	-0.25	13.5m	16m	-10	-25					2440	25.4	TO-252	No	No
ALPSAC35P04	-40	-35	26	132	-40	1	±20	±0.1	-1	-2.5	-0.25	9.4m	12.5m	-10	-20	13.4m	18.5m	-4.5	-10	3800	42	T5060P8	No	No
ALPSAB30P04	-40	-30	20	110	-40	-1	±20	±0.1	-1	-2.5	-0.25	10.3m	13m	-10	-20	13.6m	19m	-4.5	-10	3700	68	T3333P8	No	No
ALPSQ06P04	-40	-6	1.7	25	-40	-1	±20	±0.1	-1	-2.5	-0.25	29m	38m	-10	-6	35m	46m	-4.5	-4	1244	23	SOP-08	No	No
ALPS05P04A	-40	-5	3.8		-40	-1	±20	±0.1	-1	-2.5	0.25	70m	90m	-10	-3	90m	125m	-4.5	-2	573	7.1	SOT-23	No	No
ALPS2319	-40	3.1	1.25		-40	-1	±20	±0.1	-1	-3	0.25	66m	80m	-10	-3.1					595	7	SOT-23	No	No
ALPSAC80P03	-30	-80	57	342	-30	-1	±20	±0.1	-1	-2.5	0.25	3.3m	4.1m	-10	-20	5.1m	6.6m	-4.5	-10	8180	125	T5060P8	No	No
ALPSU55P03	-30	-55	52	121	-30	-1	±20	±0.1	-1	-2.5	-0.25	7.5m	10m	-10	-30	11.6m	16m	-4.5	-20	3564	37	TO-252	No	No
ALPSAC53P03	-30	-53	46		-30	1	±20	±0.1	-1	-2.5	0.25	9.3m	11.2m	-10	-13	12.2m	16m	-4.5	-9	2828	65	T5060P8	No	No
ALPSAB51P03	-30	-51.8	41.7		-24	-1	±20	±0.1	-1	-2.5	0.25	8.6m	10.5m	-10	-13	11.5m	15m	-4.5	-9	2828	33	T3333P8	Yes	No
ALPSAC50P03	-30	-50	57	132	-30	-1	±20	±0.1	-1	-2.5	0.25	5.4m	7m	-10	-20	7.6m	10m	-4.5	-10	3366	59	T5060P8	No	No
ALPSAB45P03	-30	-45	23	75.7	-30	-1	±20	±0.1	-1.2	-2.5	0.25	5.8m	7.5m	-10	-30	9m	12.6m	-4.5	-20	4650	45	T3333P8	No	No
ALPSAC45P03	-30	-45	34.4	113	-30	-1	±20	±0.1	-1	-2.5	0.25	7.6m	10m	-10	-30	12m	16.8m	-4.5	-20	3564	37	T5060P8	No	No
ALPSU45P03	-30	-45	54	64	-30	-1	±20	±0.1	-1	-2.5	0.25	10m	14m	-10	-10					2130	22	TO-252	No	No
ALPSAB42P03	-30	-42	37		-30	-1	±20	±0.1	-1.2	-2.5	0.25		14m	-10	-30		22m	-4.5	-15	2215	22	T3333P8	No	No
ALPSAB4407A	-30	-35	21.5		-30	-1	±20	±0.1	-1	-2.5	0.25	8.6m	11m	-10	-12	13m	18m	-4.5	-8	2800	30	T3333P8	No	No
ALPSQ15P03	-30	-15	3		-30	-1	±20	±1	-1	-2.5	-0.25	7m	9m	-10	-30	10m	14m	-4.5	-10	4320	45	SOP-08	No	No
ALPSQ12P03A	-30	-12.3	1.7		-24	-1	±20	±0.1	-1	-2	-0.25	6.5m	8.0m	-10	-12	8.2m	10.7m	-4.5	-9	4330	88	SOP-08	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSQ4407A	-30	-12	3		-30	-1	±20	±1	-1	-2.5	-0.25	9.3m	14m	-10	-12	14m	20m	-4.5	-10	2800	30	SOP-08	No	No
ALPSQ11DP03	-30	-11	3.6	68	-30	-1	±20	±0.1	-1	-2.5	-0.25	12.7m	16.5m	-10	-10	19m	26.5m	-4.5	-5	2130	22	SOP-08	No	No
ALPSQ4435A	-30	-10	1.9	7.8	-30	-1	±20	±1	-1	-2.5	-0.25	12.8m	16.6m	-10	-10	18.1m	23.5m	-4.5	-5	1267	23	SOP-08	No	No
ALPSQ07DP03	-30	-7.3	1.5	16	-24	-1	±25	±0.1	-1	-2	-0.25	15m	18m	-10	-10	18m	23m	-4.5	-5	2157	23	SOP-08	No	No
ALPSQ07P03	-30	-7	3		-30	-1	±20	±0.1	-1	-2.5	-0.25	27m	35m	-10	-7	38m	54m	-4.5	-4	982	10	SOP-08	No	No
ALPSL2605	-30	-6	1.25		-20	-1	±12	±0.1	-1	-2	0.25	25m	32m	-10	-4.2	38m	47m	-4.5	-4	1278	127	SOT-23-6	No	No
ALPSQ4953	-30	-5.1	2.15		-30	-1	±20	±1	-1	-2.5	-0.25	43m	55m	-10	-5	65m	90m	-4.5	-4	580	6.8	SOP-08	No	No
ALPS04P4P03	-30	-4.4	1.4	9	-24	1	±20	±0.1	-1	-2.5	-0.25	34m	44m	-10	-4	52m	73m	-4.5	-3.5	630	14	SOT-23	No	No
ALPS3407AP	-30	-4.3	1.5		-24	-1	±20	±0.1	-1.4	-2.4	-0.25	38m	50m	-10	-4.3	60m	100m	-4.5	-4	580	10	SOT-23	No	No
ALPS3401A	-30	-4.2	0.35		-24	-1	±12	±0.1	-0.7	-1.3	-0.25	50m	65m	-10	-4.2					954		SOT-23	No	No
ALPS3407	-30	-4.1	0.35		-24	-1	±20	±0.1	-1	-3	-0.25		60m	-10	-4.1		87m	-4.5	-3	700		SOT-23	No	No
ALPS3407S	-30	-4.1	1.2		-30	-1	±20	±0.1	-1	-2.4	-0.25	36m	40m	-10	-4.1	52m	65m	-4.5	-3.5	572	11.65	SOT-23	No	No
ALPS2307P	-30	-2.7	0.9		-30	-1	±20	±0.1	-1	-3	0.25	73m	88m	-10	-3.5	110m	138m	-4.5	-2.5	340	4.1	SOT-23	No	No
ALPS2303B	-30	-2.5	0.64		-30	-1	±20	±0.1	-1	-2.2	0.25	64m	80m	-10	-2.5	95m	120m	-4.5	-1	327	7.2	SOT-23	No	No
ALPS2303P	-30	-2	0.9		-30	-1	±20	±0.1	-1	-2.5	0.25	75m	130m	-10	-4	115m	180m	-4.5	-1.5	226	8.5	SOT-23	No	No
ALPSAC85P02	-20	-85	33	154	-20	-1	±12	±0.1	-0.4	-1	-0.25	2.1m	2.7m	-4.5	-30	2.7m	3.8m	-2.5	-20	15	100	T5060P8	No	No
ALPSAB55P02	-20	-55	38		-20	-1	±12	±0.1	-0.4	-1	-0.25	6.6m	8.5m	-4.5	-15	8m	12m	-2.5	-12	4600	46	T3333P8	No	No
ALPSI20P02	-20	-20	13	36	-20	-1	±20	±0.1	-0.4	-1	-0.25	12m	16m	-4.5	-10	17m	24m	-2.5	-5	2000	16	TO-251	No	No
ALPSM12P02	-20	-15	2.6	25	-20	-1	±12	±0.1	-0.4	-1	0.25	11.6m	15.1m	-4.5	-10	15.9m	20.7m	-2.5	-5	1797	16	T2020P6	No	No
ALPS07P02	-20	-7	2		-20	-1	±12	±0.1	-0.4	-1	0.25	18.7m	24.5m	-4.5	-7	22.7m	32m	-2.5	-5	2000	15.3	SOT-23-3	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPS2305U	-20	-5.6	1.47		-16	-1	±10	±0.1	-0.4	-1	-0.25	35m	45m	-4.5	-5.6	50m	90m	-1.8	-2	740	4.5	SOT-89	No	No
ALPS2035K	-20	-4.9	1.5		-20	-1	±8	±10	-0.4	-1	0.25		35m	-4.5	-4		80m	-1.8	-2	1610	15.4	SOT-23	Yes	No
ALPS2305C	-20	-4.2	1.25		-20	-1	±12	±0.1	-0.5	-1	0.25	32m	45m	-10	-3.8	50m	65m	-2.5	-1.4	740	6.1	SOT-23	No	No
ALPS2305A	-20	-4.1	1		-20	-1	±12	±0.1	-0.4	-1	-0.25	27m	35m	-4.5	-4.1	38m	53m	-2.5	-3	830	8.8	SOT-23	No	No
ALPS3415KL	-20	-4.1	1.1		-20	-1	±10	±10	-0.4	-1	-0.25	31m	40m	-4.5	-4	40m	56m	-2.5	-3	289	12	SOT-23	Yes	No
ALPSL3415K	-20	-4.1	1.1		-20	-1	±10	±0.1	-0.4	-1	0.25	30m	39m	-4.5	-4	40m	56m	-2.5	-3	289	9	SOT-23-6	Yes	No
ALPS2305	-20	-4.1	1.7		-20	-1	±12	±0.1	-0.5	-1	-0.25	35m	46m	-4.5	-4.1	46m	70m	-2.5	-3	954	7.8	SOT-23	No	No
ALPS2301	-20	-3	0.35		-20	-1	±8	±0.1	-0.4	-1	0.25	75m	105m	-4.5	-2.8	105m	128m	-2.5	-2.8	405	3.3	SOT-23	No	No
ALPS2301	-20	-3	0.35		-20	-1	±8	±0.1	-0.4	-1	0.25	75m	105m	-4.5	-2.8	105m	128m	-2.5	-2.8	405	3.3	SOT-23	No	Yes
ALPS2301C	-20	-3	1		-20	-1	±12	±0.1	-0.5	-1	-0.25	55m	70m	-4.5	-3	70m	100m	-2.5	-2	503	4.1	SOT-23	No	No
ALPS2301D	-20	-3	1.1		-20	-1	±12	±0.1	-0.45	-1.1	-0.25	54m	68m	-4.5	-2	69m	98m	-2.5	-1	533	8.3	SOT-23	No	No
ALPSL3467	-20	-2.8	1.6		-20	-1	±8	±0.1	-0.5	-1	-0.25	90m	110m	-4.5	-2.8					664	6.72	SOT-23-6	No	No
ALPS025P02	-20	-2.5	1.1	7	-16	-1	±12	±0.1	-0.35	-1	0.25	90m	112m	-4.5	-1.5	160m	240m	-1.8	-1	304	4.9	SOT-23	No	No
ALPS2301DW	-20	-2.1	0.35		-20	-1	±8	±0.1	-0.4	-1	0.25	90m	120m	-4.5	-1					405	5.5	SOT-363	No	No
ALPS2301T	-20	-2.1	0.35		-20	-1	±8	±0.1	-0.4	-1	-0.25	90m	120m	-4.5	-1					405	5.5	SOT-523	No	No
ALPS2301W	-20	-2.1	0.35		-20	-1	±8	±0.1	-0.4	-1	-0.25	90m	120m	-4.5	-1					405	3.3	SOT-323	No	No
ALPSL4601DP	-20	-2	1		20	-1	±12	±0.1	-0.4	-1	0.25	105m	120m	-4.5	-2					405	2.9	SOT-23-6	No	No
ALPSAE0085P02	-20	-0.85	0.69		-16	-1	±12	±10	-0.5	-1	0.25	530m	640m	-4.5	-0.55	1300m	1950m	-1.8	-0.35	58	0.8	T1006P3	Yes	No
ALPSJ005P02E	-20	-0.51	0.15		-16	-1	±12	±0.1	-0.5	-1	-0.25	482m	580m	-4.5	-0.55	1037m	1566m	-1.8	-0.35	58	0.6	SOT-723	Yes	No
ALPS1013T	-20	-0.46	0.27		-20	-0.1	±4.5	±2	-0.5	-1	-0.25	0.5	0.7	-4.5	-0.35	1	1.3	-1.8	-0.15	59.76	0.622	SOT-523	Yes	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC01
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPS2305	-12	-4.1	0.35		-8	-1	±8	±0.1	-0.5	-0.9	-0.25		46m	-4.5	-4.1					740	4.5	SOT-23	No	Yes
ALPS1012EW	20	0.5	0.15		16	0.1	±4.5	±1	0.5	1.2	0.25	250m	700m	4.5	0.6					100	750	SOT-323	Yes	No
ALPSJ006P3N02 E	20	0.63	0.15		16	1	±8	±10	0.5	1	0.25	200m	240m	4.5	0.55	240m	310m	2.5	0.45	43	1.1	SOT-723	Yes	No
ALPS1012T	20	0.63	0.28		20	0.1	±4.5	±1	0.5	1	0.25	0.3	0.4	4.5	0.6	0.5	0.7	1.8	0.35	60.67	0.736	SOT-523	Yes	No
ALPSV007DN02	20	0.7	0.15		16	1	±8	±0.1	0.5	1.1	0.25	190m	230m	4.5	0.55	234m	305m	2.5	0.45	43	2	SOT-563	No	No
ALPS3134KDW	20	0.75	0.15		20	1	±10	±20	0.4	1.1	0.25	0.27	0.38	4.5	0.65	0.35	0.45	4.5	0.5	79	0.75	SOT-363	Yes	No
ALPS3134KT	20	0.75	0.17		20	1	±10	±10	0.4	1	0.25	0.14	0.19	4.5	0.5	0.225	0.315	2.5	0.4	60	1	SOT-523	Yes	No
ALPSV6303K	20	0.8	0.5		20	1	±8	±0.1	0.5	1	0.25	300m	500m	4.5	0.6	600m	800m	2.5	0.4	42	3.4	SOT-563	Yes	No
ALPSV8808K	20	0.8	0.5		20	1	±8	±10	0.5	1	0.25	230m	400m	4.5	0.5	520m	800m	1.5	0.05	40	1	SOT-563	Yes	No
ALPSH0087N02E	20	0.87	0.28		16	1	±8	±10	0.5	1	0.25	190m	230m	4.5	0.55	303m	455m	1.8	0.35	43	2	SOT-523	Yes	No
ALPS2021W	20	0.89	0.37		16	0.1	±5	±5	0.5	0.85	0.25	0.22	0.26	4.5	0.5					50	1.15	SOT-323	No	No
ALPS3134KDW1	20	0.9	0.23		20	1	±10	±10	0.4	1	0.25	135m	175m	4.5	0.5	195m	275m	2.5	0.4	60	1	SOT-363	Yes	No
ALPSF007DN02E	20	0.9	0.25		16	1	±20	±0.1	0.5	1	0.25	245m	300m	4.5	0.6	420m	580m	1.8	0.35	40	0.54	SOT-363	Yes	No
ALPS0098N02E	20	0.98	0.36		16	1	±12	±0.1	0.5	1	0.25	190m	230m	4.5	0.55	365m	550m	1.8	0.35	41	0.54	SOT-23	Yes	No
ALPSH4153K	20	1	0.35		16	1	±8	±10	0.5	1	0.25	280m	400m	4.5	0.8	350m	500m	2.5	0.5	38	1.6	SOT-523	Yes	No
ALPS014N02E	20	1	0.36		16	1	±8	±10	0.5	1	0.25	190m	230m	4.5	0.55	234m	305m	2.5	0.45	43	1.1	SOT-23	Yes	No
ALPSAE014N02	20	1.4	0.7		16	1	±8	±10	0.5	1	0.25	190m	230m	4.5	0.55	303m	455m	1.8	0.35	43	2	T1006P3	Yes	No
ALPS2302DW	20	2.1	0.35		20	1	±8	±0.1	0.7	1.2	0.25	45m	60m	4.5	3.6	70m	115m	2.5	3	300	4	SOT-363	No	No
ALPS2302T	20	2.1	0.35		20	1	±8	±0.1	0.7	1.2	0.05	45m	60m	4.5	2							SOT-523	No	No
ALPS2302W	20	2.1	0.35		20	1	±8	±0.1	0.7	1.2	50	45m	60m	4.5	2							SOT-323	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPS2302A1	20	3	0.35		20	1	±8	±0.1	0.7	1.2	0.05	45m	60m	4.5	3.6					300	4	SOT-23	No	No
ALPS2302C	20	3.3	1.25		20	1	±8	±10	0.5	1	0.25	50m	65m	4.5	2.8	65m	90m	2.5	2	280	5.3	SOT-23	No	No
ALPS2302U	20	3.8	0.9		20	1	±12	±0.1	0.5	1.2	0.25	39m	45m	4.5	3	45m	60m	2.5	2.8	260	2.9	SOT-89	No	No
ALPS2300	20	3.8	1.25		20	1	±10	±0.1	0.6	1.5	0.25	32m	40m	4.5	5					888	16.8	SOT-23	No	No
ALPSL8205	20	4.6	1.25		20	1	±12	±0.1	0.5	1.5	0.25	22m	27m	4.5	4.6	29m	34m	2.5	3.5	550	6.2	SOT-23-6	No	No
ALPS8810E	20	5	0.35		16	1	±8	±10	0.4	1	0.25	14m	26m	10	5	48m	70m	1.8	3	740	15	SOT-23	Yes	No
ALPS051N02	20	5.1	1		16	1	±12	±0.1	0.4	0.9	0.25	21m	25m	4.5	1.5					427	8.6	SOT-23	No	No
ALPS2312K	20	5.5	1.25		16	1	±12	±10	0.6	1	0.25	20m	25m	4.5	5.4	26m	33m	2.5	4.3	333	5	SOT-23	Yes	No
ALPS2312A	20	6.5	1.25		20	1	±12	±0.1	0.5	1	0.25	16m	21m	4.5	4	20m	30m	2.5	3	780	11	SOT-23	No	No
ALPSQB06DN02K	20	6.5	1.5		16	1	±12	±10	0.5	1	0.25	13m	16m	10	7.5					318	4.6	TSSOP-8	Yes	No
ALPS07P5N02E	20	7.5	1.1	8.5	16	1	±8	±0.1	0.4	0.9	0.25	17m	20m	4.5	4	24m	36m	1.8	1	702	4.7	SOT-23	Yes	No
ALPSAM07P8DN02E	20	7.8	0.98		16	1	±8	±10	0.4	0.9	0.25	6m	8m	4.5	5.5	7.8m	11m	2.5	5.5	1340	6	T2030P6	Yes	No
ALPSAB60N02	20	60	39	121	20	1	±12	±0.1	0.5	1	0.25	3.0m	3.9m	4.5	3.9	3.8m	4.9m	2.5	20	3476	65	T3333P8	No	No
ALPS2SK3018WT	30	0.1	0.15		30	0.2	±20	±0.5	0.8	1.5	0.1		8	4	0.01		13	2.5	0.001	13		SOT-523	Yes	No
ALPS2SK3018W	30	0.1	0.2		30	0.2	±20	±0.5	0.8	1.5	0.1		8	4	0.01		13	2.5	0.001	13		SOT-323	Yes	No
ALPS2SK3018	30	0.1	0.35		30	1	±20	±10	1	2	0.25		8	4.5	0.01					13		SOT-23	Yes	No
ALPS2SK3019ET	30	0.2	0.27		30	1	±20	±0.1	1	2.2	0.25		2.8	10	0.25	1.1	4.2	4.5	0.25	23.2	0.9	SOT-523	Yes	No
ALPSH003N03E	30	0.3	0.313		30	1	±20	±0.1	0.8	1.6	0.25	1.2	1.5	10	0.3	1.3	2.3	4.5	0.2	23		SOT-523	Yes	No
ALPSJ006N03E	30	0.6	0.15	0.16	24	1	±12	±10	0.6	1.3	0.25	350m	420m	4.5	0.5	740m	850m	1.8	0.1	38.2	0.86	SOT-723	Yes	No
ALPS007N03	30	0.72	0.36	0.16	24	1	±12	±0.1	0.6	1.1	0.25	330m	400m	4.5	0.5	600m	825m	1.8	0.1	38.2	0.86	SOT-23	No	No





beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub>	Max. (μA)	V <sub>GS</sub>	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub>	@I <sub>D</sub>	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub>	@I <sub>D</sub>	Typ. (pF)	Typ. (nC)			
ALPSAE01N03E	30	1	0.69	0.16	24	1	±12	±10	0.6	1.3	0.25	350m	420m	4.5	0.5	740m	850m	1.8	0.1	38.1	0.85	T1006P3	Yes	No
ALPSH01N03K	30	1	1.3		24	1	±16	±10	0.7	1.6	0.25	350m	700m	10	0.2	450m	1	4.5	0.2	29	1.7	SOT-523	Yes	No
ALPS2306	30	3.16	0.75		30	±0.5	±20	±0.1	1	3	0.25	38m	47m	10	3.5					305	3	SOT-23	No	No
ALPS2304	30	3.3	0.35		30	1	±20	±0.1	1.2	2.2	0.25	49m	60m	10	3.2					235	2.1	SOT-23	No	No
ALPS3402	30	4	0.35		24	1	±12	±0.1	0.6	1.4	0.25	45m	55m	10	4					390	4.34	SOT-23	No	No
ALPS047N03	30	4.7	1.1		24	1	±12	±100	0.6	1.3	0.25	26m	32m	10	5	32m	45m	2.5	2.6	667	13.5	SOT-23	No	No
ALPSK04P9N03E	30	4.9	1.25	6	24	1	±12	±10	0.4	1.3	0.25	26m	31m	4.5	2	45m	68m	1.8	0.5	632	4.1	SOT-23-3	Yes	No
ALPS3400A	30	5.8	0.35		24	1	±12	±0.1	0.7	1.4	0.25	27m	35m	10	5.8					1050		SOT-23	No	No
ALPS054N03	30	5.8	1.1	6	24	1	±20	±0.1	1	2	0.25	20m	24m	10	5.8	24m	31m	4.5	5	500	8.4	SOT-23	No	No
ALPS3404A	30	5.8	1.1		30	1	±20	±0.1	1.2	2.2	0.25	18.4m	24m	10	5.5	25.5m	33m	4.5	4.5	485	10	SOT-23	No	No
ALPSK3404	30	5.8	1.4		24	1	±20	±0.1	1	2.4	0.25	23m	25m	10	5.8	32m	35m	4.5	5	255	5.2	SOT-23	No	No
ALPSQ06DN03	30	6	1.1	10	24	1	±20	±0.1	1	2	0.25	16m	19m	10	10	20m	26m	4.5	5	500	3.2	SOP-08	No	No
ALPSQ08DN03	30	8	1.3	16	24	1	±20	±0.1	1.1	2.1	0.25	10m	12m	10	10	12m	16m	4.5	5	873	10.3	SOP-08	No	No
ALPSM10N03	30	10	2.4	12	30	1	±20	±0.1	1.2	2.2	0.25	15.6m	20.3m	10	5	21.8m	28.3m	4.5	3	485	10	T2020P6	No	No
ALPSM12N03	30	12	2.6	20	30	1	±20	±0.1	1	2.2	0.25	9.2m	12m	10	10	15m	19.5m	4.5	5	853	17	T2020P6	No	No
ALPSQ3010D	30	12	3		30	1	±20	±0.1	1	2.5	0.25	9m	12m	10	13	13m	18m	4.5	10	900	19	SOP-08	No	No
ALPSAB12N03	30	12	4.8	11	30	1	±20	±0.1	1	2.5	0.25	15m	20m	10	5	21m	29m	4.5	3	490	5.2	T3333P8	No	No
ALPSQ4446	30	15	3		30	1	±20	±1	1	2.5	0.25	6.2m	8m	10	15	10m	14m	4.5	10	1116	13.3	SOP-08	No	No
ALPSAV15DN03	30	15	46	20	30	1	±20	±0.1	1	2.2	0.25	11m	14.3m	10	10	16.7m	21.7m	4.5	5	853	16	T3333P8 Dual	No	No
ALPSAV16DN03	30	16	7.8	7.2	24	1	±20	±0.1	1	2	0.25	15m	18m	10	10	18m	24m	4.5	8	500	8.5	T3333P8 Dual	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSQ20N03	30	20	4	100	30	1	±20	±0.1	0.7	1.5	0.25	4.6m	6m	4.5	10	6.1m	8.6m	4.5	10	1700	45	SOP-08	No	No
ALPSM3010A	30	20	6.2	33	30	1	±20	±0.1	1	2.5	0.25	7.5m	10m	10	20	11.5m	17m	4.5	10	1011	19	T2020P6	No	No
ALPSM22N03	30	22	6.9	8.5	24	1	±20	±0.1	1.2	2.5	0.25	7.2m	9m	10	15	10.5m	13.6m	4.5	10	468	7.7	T2020P6	No	No
ALPSAB25N03	30	25	9.6	23	30	1	±20	±0.1	1	2.5	0.25	7m	9m	10	20	10.5m	14.5m	4.5	10	1011	19	T3333P8	No	No
ALPSAB3008A	30	30	23	39	30	1	±20	±0.1	1	2.5	0.25	6.6m	8.6m	10	25	9.9m	12.9m	4.5	15	1174	23	T3333P8	No	No
ALPSAC30N03	30	30	57	36	30	1	±20	±0.1	1.2	2.2	0.25	7.5m	9.8m	10	20	11m	14.3m	4.5	10	1002	20		No	No
ALPSAB38N03	30	38	23	16	24	1	±20	±0.1	1.1	2.1	0.25	8.3m	10m	10	10	11m	13.8m	4.5	5	875	10.2	T3333P8	No	No
ALPSAB3006B	30	40	35	64	30	1	±20	±0.1	1	2.5	0.25	4.7m	6.1m	10	20	7.4m	9.6m	4.5	10	1788	34	T3333P8	No	No
ALPSAB43N03	30	43	26	8.5	24	1	±20	±0.1	1.2	2.5	0.25	7m	8.8m	10	15	10.6m	13.8m	4.5	10	468	7.7	T3333P8	No	No
ALPSAB3005A	30	50	27		30	1	±20	0.1	1	2.5	0.25	3.5m	4.7m	10	30	7	10m	4.5	20	2153	45	T3333P8	No	No
ALPSU50N03A	30	50	33	36	30	1	±20	±0.1	1	2.5	0.25	5.8m	7.5m	10	25	10m	14m	4.5	15	1140	13.3	TO-252	No	No
ALPSAC53N03	30	53	32	22	24	1	±20	±0.1	1.1	2.1	0.25	6.2m	7.4m	10	8	8.2m	10.7m	4.5	6	1094	16	T5060P8	No	No
ALPSAC3005A	30	60	31	85	30	1	±20	±100	1	2.5	0.25	3.8m	5m	10	30	7.5m	11m	4.5	20	2100	45	T5060P8	No	No
ALPSAB64N03	30	64	31	39	24	1	±20	±0.1	1.1	2.1	0.25	4.1m	4.8m	10	20	5.3m	6.3m	4.5	20	1859	26	T3333P8	No	No
ALPSAC70N03A	30	70	46	48	24	1	±20	±0.1	1	2	0.25	3.4m	4m	10	20	4.5m	6m	4.5	10	2435	33	T5060P8	No	No
ALPSU3006B	30	70	46	56	30	1	±20	±0.1	1	2.5	0.25	4.8m	6m	10	30					1614	33.7	TO-252	No	No
ALPSAB3003A	30	80	31.7	225	30	1	±20	±0.1	1	2.5	0.25	2.5m	3.3m	10	30	4.5m	6.5m	4.5	20	3500	38	T3333P8	No	No
ALPSAC3003A	30	90	39		30	1	±20	±100	1	2.5	0.25	2.4m	3.2m	10	30	4.5m	6.2m	4.5	20	3500	38	T5060P8	No	No
ALPSU90N03	30	90	187	300	30	1	±20	±0.1	1.5	2.5	0.25	2.4m	4.5m	10	28.8	2.7m	5.5m	4.5	27	4500	81.5	TO-252	No	No
ALPSAB3002AK	30	100	42	256	30	1	±20	±0.1	1.3	2.5	0.25	2.3m	3m	10	30	3.6m	4.7m	4.5	20	5065	97	T3333P8	Yes	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSAC115N03	30	115	50	144	24	1	±20	±0.1	1	2	0.25	2.1m	2.5m	10	20	2.8m	3.6m	4.5	15	4242	46	T5060P8	No	No
ALPSAC3002B	30	120	48	240	30	1	±20	±100	1	2.5	0.25	1.6m	2.1m	10	30	2.7m	3.8m	4.5	20	4930	70	T5060P8	No	No
ALPSP133N03	30	133	83	92	24	1	±20	±0.1	1	2	0.25	2.6m	3m	10	20					4200	88.1	TO-220AB	No	No
ALPSAC136N03	30	136	63	61	24	1	±20	±0.1	1.2	2.5	0.25	1.7m	2.2m	10	20	2.4m	3.2m	4.5	15	2091	32	T5060P8	No	No
ALPSAB145N03	30	145	50	101	30	1	±20	±0.1	1.2	2.5	0.25	1.2m	1.5m	10	20	2.0m	2.9m	4.5	15	2975	39	T3333P8	No	No
ALPSP3003A	30	150	109	225	30	1	±20	±0.1	1	2.5	0.25	2.3m	3m	10	30					3500	38	TO-220AB	No	No
ALPSAC178N03	30	178	78	101	30	1	±20	±0.1	1.2	2.5	0.25	1.3m	1.6m	10	20	2.0m	2.9m	4.5	15	2975	39	T5060P8	No	No
ALPSAC245N03	30	245	96	205	24	1	±20	±100	1	2.5	0.25	0.85m	1.1m	10	20	1.3m	1.7m	4.5	20	4185	64	T5060P8	No	No
ALPSAC254N03	30	254	96	375	24	1	±20	±0.1	1	2	0.25	0.85m	1m	10	20	1.1m	1.4m	4.5	15	6545	84	T5060P8	No	No
ALPSUD287N03	30	287	104	205	24	1	±10	±0.1	1	2	0.25	0.77	0.87	10	20	1.05	1.35	4.5	15	6545	175.7	LFPAK5060-4	No	No
ALPSAC327N03	30	327	104	342	24	1	±16	±0.1	1.2	2.5	0.25		0.69m	10	20	0.8m	0.99m	4.5	20	7543	120	T5060P8	No	No
ALPS05N04	40	5	1.3		40	1	±20	±0.1	1.3	2.9	0.25	30m	39m	10	4	40m	52m	4.5	3	536	11	SOT-23	No	No
ALPSL08N04	40	8	1.7		40	1	±20	±0.1	1.3	2.2	0.25	17m	22m	10	4	21m	27m	4.5	3	1112	22	SOT-23-6	No	No
ALPSAV12DN04	40	12	15	12	40	1	±20	±0.1	1	2.5	0.25	20m	26m	10	5	28m	36m	4.5	3	815	16	T3333P8 Dual	No	No
ALPSQ13DN04	40	13	2	81	40	1	±20	±0.1	1.3	2.5	0.25	7.9m	10.3m	10	13	10.5m	13.7m	4.5	10	2443	48	SOP-08	No	No
ALPSQ15N04	40	15	4	81	40	1	±20	±0.1	1.1	2.5	0.25	7m	9m	10	15					2400	37	SOP-08	No	No
ALPSAB40N04	40	40	27		40	1	±20	0.1	1	2.5	0.25	5.7m	7.5m	10	30	10m	14m	4.5	20	2229	48	T3333P8	No	No
ALPSAC53N04	40	53	96	26	32	1	±20	±0.1	1.2	2.4	0.25	6.7m	8m	10	20	8m	10m	4.5	15	1819	22	T5060P8	No	No
ALPSAB55N04	40	55	28	36	32	1	±20	±0.1	1.2	2.5	0.25	4.5m	5.6m	10	20	5.9m	7.8m	4.5	15	1204	17.9	T3333P8	No	No
ALPSU60N04A	40	60	65		40	1	±20	±100	1	2	0.25	9m	13m	10	30					1800	29	TO-252	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC-Q01
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub>	Max.	V <sub>GS</sub>	Max.	Min.	Max.	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Typ.			
ALPSAC70N04	40	70	42	36	32	1	±20	±0.1	1.2	2.5	0.25	4.2m	5.2m	10	20	5.8m	7.6m	4.5	15	1204	17.9	T5060P8	No	No
ALPSU4005A	40	80	77	104	40	1	±20	±1	1	2.5	0.25	4.2m	5.5m	10	30					3042	57	TO-252	No	No
ALPSAC86N04	40	86	63	96	32	1	±20	±0.1	2.2	3.4	0.25	4.1m	5.1m	10	20					1027	14.9	T5060P8	No	No
ALPSAB99N04	40	99	52	79	32	1	±20	±0.1	1.2	2.5	0.25	2.5m	3.1m	10	20	3.5m	4.6m	4.5	15	1424	22	T3333P8	No	No
ALPSAC4004A	40	100	61	150	40	1	±20	±0.1	1	2.5	0.25	2.7m	3.5m	10	30	3.8m	5.4m	4.5	20	5595	65	T5060P8	No	No
ALPSU4004A	40	120	108	160	40	1	±20	±1	1	2.5	0.25	3.3m	4.3m	10	30	5.4m	7.5m	4.5	20	5595	65	TO-252	No	No
ALPSP4004A	40	120	123	148	40	1	±20	±0.1	1.1	2.4	0.25	3.4m	4.5m	10	30					5595	65	TO-220AB	No	No
ALPSAC140N04	40	140	83	196	40	1	±20	±0.1	1	2.5	0.25	1.9m	2.4m	10	30	2.7m	3.5m	4.5	20	2625	42	T5060P8	No	No
ALPSAC142N04	40	142	73.5	101	32	1	±20	±0.1	1.2	2.2	0.25	1.3m	1.6m	10	20	2m	2.5m	4.5	20	4928	69	T5060P8	No	No
ALPSU150N04	40	150	125	163	32	1	±20	±0.1	1.2	2.5	0.25	1.8m	2.2m	10	20	2.2m	3.0m	4.5	15	3133	46	TO-252	No	No
ALPSB150N04	40	150	180	272	40	1	±20	±0.1	2	4	0.25	3m	4m	10	30					4900	80	TO-263	No	No
ALPSAC176N04	40	176	115	163	32	1	±20	±0.1	1.2	2.5	0.25	1.6m	2m	10	20	2.2m	3m	4.5	15	3133	46	T5060P8	No	No
ALPSB190N04	40	190	197	576	40	1	±25	±0.1	2	4	0.25	1.9m	2.6m	10	30					9060	145	TO-263	No	No
ALPSAC210N04	40	210	120	420	40	1	±20	±0.1	1	2.5	0.25	1.2m	1.6m	10	30	2.1m	3m	4.5	20	14700	95	T5060P8	No	No
ALPSAC250N04	40	250	89	204	32	1	±20	±0.1	1	2.3	0.25	0.8m	1.0m	10	20	1.25m	1.6m	4.5	10	4928	69	T5060P8	No	No
ALPSJ002N05E	50	0.2	0.15		50	1	±20	±10	0.6	1.5	0.25		2.5	10	0.2		3.5	4.5	0.2	50(Max.)	0.63	SOT-723	Yes	No
ALPS3K50DW	50	0.2	0.2		50	1	±20	±0.1	0.6	1.5	1	2.5	3.5	10	0.2	3.1	4	4.5	0.2	33	4.7	SOT-363	Yes	No
ALPSBSS138	50	0.2	0.225		25	0.1	±20	±0.1	0.5	1.5	1		3.5	5	0.2					40		SOT-23	No	No
ALPSBSS138	50	0.2	0.225		25	0.1	±20	±0.1	0.8	1.5	1		3.5	5	0.2					27		SOT-23	No	Yes
ALPS2SK3019WT	50	0.2	0.25		50	1	±20	±10	0.6	1.5	1	2.5	3.5	10	0.2	3.1	4	4.5	0.2	33	4.7	SOT-523	Yes	No

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC 01
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSBSS138KDW4	50	0.22	0.15		50	0.5	±20	±5	0.8	1.5	0.25	1	3.5	10	0.22	1.1	6	4.5	0.22	26.5		SOT-363	Yes	No
ALPSBSS138T	50	0.22	0.25		30	0.1	±20	±0.1	0.8	1.5	1		3.5	10	0.22		6	4.5	0.22	27		SOT-523	No	No
ALPSBSS138DW	50	0.22	0.3		50	0.5	±20	±0.1	0.8	1.5	1		3.5	10	0.22		6	4.5	0.22	27		SOT-363	No	No
ALPSBSS138K2	50	0.22	0.35		50	0.5	±20	±5	0.8	1.8	0.25		3.5	10	0.22		6	4.5	0.22	27		SOT-23	Yes	No
ALPSJ002P8N05E	50	0.28	0.15		50	1	±12	±10	0.6	1.5	0.25	1.6	1.9	10	0.22	1.7	2.2	4.5	0.19	25	1.7	SOT-723	Yes	No
ALPSV003P3DN05E	50	0.33	0.42		40	1	±20	±0.1	0.6	1.5	0.25	1.6	1.9	10	0.22	1.7	2.2	4.5	0.19	25	0.92	SOT-563	Yes	No
ALP2N7002	60	0.115	0.2		60	1	±20	±0.1	1	2.5	0.25		7.5	10	0.5					17		SOT-23	No	No
ALP2N7002KT	60	0.115	0.2		60	0.08	±20	±0.08	1	2.5	0.25	0.9	5	10	0.5	1.1	7	5	0.05	50		SOT-523	Yes	No
ALP2N7002KW	60	0.115	0.2		60	1	±20	±10	1	2.5	0.25		4	4.5	0.2		4	4.5	0.2		0.8	SOT-323	Yes	No
ALP2N7002KW	60	0.115	0.2		60	1	±20	±10	1	2.5	0.25		4	4.5	0.2							SOT-323	Yes	Yes
ALP2N7002T	60	0.115	0.2		60	0.08	±20	±0.08	1	2.5	0.25	0.9	5	10	0.5					50		SOT-523	No	No
ALP2N7002W	60	0.115	0.2		60	1	±20	±0.1	1	2.5	0.25		7.5	10	0.5							SOT-323	No	No
ALP2N7002KDW6	60	0.3	0.15		48	1	±20	±10	1	2.5	1	1.1	5.3	4.5	0.2					40		SOT-363	Yes	No
ALP2N7002KDW6	60	0.3	0.15		48	1	±20	±10	1	2.5	1	1.1	5.3	4.5	0.2					40		SOT-363	Yes	Yes
ALP2N7002E	60	0.3	0.35		60	1	±20	±0.1	1	2.5	0.25		2.8	10	0.5					21	0.44	SOT-23	Yes	No
ALP2N7002K	60	0.3	0.35		60	1	±20	±10	1	2.5	0.25		3	10	0.5		4	4.5	0.2	35	0.8	SOT-23	Yes	Yes
ALP2N7002KS	60	0.3	0.35		60	1	±20	±10	1	2.5	0.25	1.69	2.2	10	3					28	1.7	SOT-23	Yes	No
ALP2N7002K	60	0.34	0.35		48	1	±20	±10	1	2.5	0.25	1.3	5	10	0.5				40(Max.)	30		SOT-23	Yes	No
ALPSBSS138KW	60	0.35	0.35		48	1	±16	±30	0.6	1.4	0.1	2	2.5	10	0.2	2.5	3.5	4.5	0.1	38	1.9	SOT-323	Yes	No
ALPSBSS138AK	60	0.4	0.35		48	1	±16	±30	0.6	1.4	0.1	2	2.5	10	0.2	2.5	3.5	4.5	0.1	38	1.9	SOT-23	Yes	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC01
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSBSS138KT	60	0.4	0.35		48	1	±20	±30	0.6	1.4	0.25	2	2.5	10	0.2	2.5	3.5	4.5	0.1	38	1.9	SOT-523	Yes	No
ALPSBSS138KDW3	60	0.4	0.46		48	1	±20	±30	0.6	1.4	0.25	2	2.5	10	0.2	2.5	3.5	4.5	0.1	38	1.9	SOT-363	Yes	No
ALPSAE72K	60	0.41	0.1		60	0.1	±20	±10	1.3	2.3	0.25	1.2	1.5	10	0.04	1.3	1.8	4.5	0.035	41	0.72	T1006P3	Yes	No
ALP2N7002K7DW	60	0.6	0.35		48	1	±20	±30	1	1.8	0.25	1.6	2	10	0.2	1.7	3	4.5	0.1	42	1.8	SOT-363	Yes	No
ALPS02P2N06	60	2.2	0.9	6.3	48	1	±20	±0.1	1	2.5	0.25	75m	100m	10	2.5	85m	119m	4.5	2	355	9	SOT-23	No	No
ALPS2310	60	3	0.35		60	1	±20	±0.1	1	3	0.25		105m	10	3		125m	4.5	3	247	6	SOT-23	No	No
ALPS2310	60	3	0.35		60	1	±20	±0.1	1	3	0.25		105m	10	3		125m	4.5	3	247	6	SOT-23	No	Yes
ALPSA03N06	60	3	1.5		60	1	±20	±0.1	1	2.5	0.25	70m	105m	10	3					250	7	SOT-89	No	No
ALPS2310S	60	4	1.5		60	0.1	±20	±0.1	1	2	0.25	58m	70m	10	4	65m	85m	4.5	2	380	7.2	SOT-23	No	No
ALPS3422	60	4.2	1.25		48	1	±20	±0.1	1	2	0.25	79m	90m	10	4.2	88m	105m	4.5	2.8	551	13.2	SOT-23	No	No
ALPST9971P	60	5	2.7	22	60	1	±25	±0.1	1	3	0.25		50m	10	5		60m	4.5	2	950	18	SOT-223	No	No
ALPSQ06DN06	60	6.3	1.3		48	1	±20	±0.1	1	2.5	0.25	14m	18.5m	10	6					2172	24.5	SOP-08	No	No
ALPSQ11N06	60	11	1.7		60	1	±20	±0.1	1	3	0.25	5m	6.5m	10	12					1999	39.6	SOP-08	No	No
ALPSQ13N06	60	12.7	3.6	20	48	1	±20	±0.1	1.2	2.5	0.25	10m	12.5m	10	12	13m	16.9m	4.5	8	731	13.9	SOP-08	No	No
ALPSA20N06	60	20	1.5	72	60	1	±20	±1	1	2.5	0.25	23m	35m	10	20					500	47	SOT-89	No	No
ALPSM21N06	60	21	9.6	20	48	1	±20	±0.1	1.2	2.5	0.25	9.8m	12.8m	10	20	12.5m	16.3m	4.5	15	731	13.9	T2020P6	No	No
ALPSAT21P6DN06	60	21.6	1.4	12.8	48	1	±20	±10	1.2	2.5	0.25	33m	40m	10	10	37m	47m	4.5	5	1108	26	T5060P8 Dual	No	No
ALPSAV24DN06	60	24	14	26	48	1	±20	±0.1	1.2	2.5	0.25	10m	13.8m	10	20	14m	18.4m	4.5	15	731	13.9	T3333P8 Dual	No	No
ALPSAC25N06	60	25	35	13.5	48	1	±20	±0.1	1.2	2.5	0.25	22m	28m	10	5	28m	37m	4.5	3	288	5.8	T5060P8	No	No
ALPSU25N06	60	30	45.7	72	60	1	±20	±100	1	2.5	0.25	23m	29m	10	15	29m	40m	4.5	5	1562	25	TO-252	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC01
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub>	Max.	VGS	Max.	Min.	Max.	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Typ.			
ALPSAB35N06A	60	35	41	64	60	1	±20	±0.1	1	2.5	0.25	12m	18m	10	30	15m	27m	4.5	20	2900	50	T3333P8	No	No
ALPSAC43N06	60	43	31	34	48	1	±20	±0.1	1.2	2.5	0.25	7.2m	9.4m	10	20	9m	12m	4.5	15	1087	16.6	T5060P8	No	No
ALPSAG45N06	60	45	60	180	60	1	±25	±0.1	1	2.5	0.25	7.5m	9m	10	25	9.8m	14m	4.5	25	1480	23	T3030P8	No	No
ALPSAC50DN06	60	50	51	100	60	1	±20	±0.1	1	2.5	0.25	9.5m	12m	10	20	11.5m	16m	4.5	15	4605	77	T5060P8 Dual	No	No
ALPSAB52N06	60	52	30	80	48	1	±12	0.1	1.2	2.5	0.25	5.0m	6.2m	10	20	6.6m	8.3m	4.5	15	2122	31	T3333P8	No	No
ALPSU52N06	60	52	57	20	48	1	±20	±0.1	1.2	2.5	0.25	9.9m	12m	10	20	12.6m	16m	4.5	15	731	13.9	TO-252	No	No
ALPSU22N06	60	54	37	16	48	1	±20	±0.1	1.3	2.5	0.25	30m	35m	10	6	33m	43m	4.5	5	1147	12	TO-252	No	No
ALPSAC55DN06	60	55	39	76	48	1	±20	±0.1	1.2	2.5	0.25	6.4m	7.8m	10	20	7.6m	9.7m	4.5	15	2030	32	T5060P8 Dual	No	No
ALPSAC55N06	60	55	53	81	60	1	±20	±0.1	1	2.5	0.25	7.5m	10m	10	20	10m	14m	4.5	10	4605	77	T5060P8	No	No
ALPSU56N06	60	56	52	74	48	1	±20	±0.1	1.2	2.5	0.25	7.4m	9.4m	10	20	9.5m	12.4m	4.5	15	1110	18.3	TO-252	No	No
ALPSP65N06A	60	58	70	110	60	1	±20	±100	1	2.5	0.25	7.5m	10m	10	30					4400	77	TO-220AB	No	No
ALPSAC71N06	60	71	50	22	48	1	±20	±0.1	1	3	0.25	5m	6m	10	20	8m	10m	4.5	10	2083	19.8	T5060P8	No	No
ALPSP80N06A	60	80	108	169	60	1	±20	±0.1	2	4	0.25	5.3m	7m	10	30					4136	90	TO-220AB	No	No
ALPSU80N06A	60	80	110	123	60	1	±20	±100	2	4	0.25	7.4m	8.5m	10	30					3300	90	TO-252	No	No
ALPSAC98N06	60	104	94	94	48	1	±20	±0.1	1.2	2.5	0.25	3.9m	4.9m	10	20					2030	32	T5060P8	No	No
ALPSP120N06	60	120	181	400	60	1	±20	±0.1	2	4	0.25	4.6m	6m	10	30					5672	103	TO-220AB	No	No
ALPSAC142N06	60	142	96	45	48	1	±20	±0.1	1	3	0.25	2.2m	2.6m	10	20	3.5m	4.5m	4.5	10	4635	39.5	T5060P8	No	No
ALPSAC154N06	60	154	104	240	48	1	±20	±0.1	1.2	2.5	0.25	1.8m	2.3m	10	20	2.4m	3.2m	4.5	15	2880	48	T5060P8	No	No
ALPSAC160N06	60	160	147	196	60	1	±25	±0.1	2	4	0.25	2.3m	3.0m	10	30					3383	74	T5060P8	No	No
ALPSP180N06	60	180	307	324	60	1	±20	±0.1	2	4	0.25	3.3m	4.3m	10	30					7636	138	TO-220AB	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSB195N06	60	195	156	375	48	1	±20	±0.1	2.2	3.4	0.25	1.8m	2.3m	10	20					6035	78	TO-263	No	No
ALPSAC275N06	60	275	160	480	48	1	±20	±0.1	1.2	2.5	0.25	0.9m	1.2m	10	20	1.3m	1.7m	4.5	15	6338	102	T5060P8	No	No
ALPSAC50N08	80	50	56	140.5	80	1	±20	±0.1	1	3	0.25		12m	10	40		14m	4.5	20	5503	81	T5060P8	No	No
ALPSAB68N08	80	68	35.7	56	65	1	±20	±0.1	1	3	0.25	6.4m	7.7m	10	20	10m	13m	4.5	10	1692	35	T3333P8	No	No
ALPSAC144N08	80	144	139	266	64	1	±20	±0.1	2	4	0.25	2.9m	3.6m	10	20					2107	35.8	T5060P8	No	No
ALPSP194N08	80	194	192	304	64	1	±20	±0.1	2	4	0.25	2.5m	3m	10	20					5552	88	TO-220AB	No	No
ALPSAC83N08	80	207	50	31	64	1	±20	±0.1	1.3	2.5	0.25	6.1m	7.3m	10	20	9.2m	12m	4.5	10	1692	35	T5060P8	No	No
ALPSP300N08	80	300	278	696	64	1	±20	±0.1	2	4	0.25	1.5m	1.9m	10	20					12007	190	TO-220AB	No	No
ALPSB121N085	85	121	130	115	68	1	±20	±0.1	2	4	0.25	4.2m	5m	10	20					2451	39.7	TO-263	No	No
ALPSAC137N085	85	137	138	434	64	1	±20	±0.1	2	4	0.25	3.1m	3.9m	10	20					4083	62	T5060P8	No	No
ALPSBSS123K	100	0.17	0.35		20	0.1	±20	±1	1	2.5	0.25		6	10	0.17		10	4.5	0.17	29	1.4	SOT-23	Yes	No
ALPSBSS123KW	100	0.17	0.35		100	1	±20	±0.1	1	2.5	0.25		6	10	0.17		10	4.5	0.17	29	1.4	SOT-323	Yes	No
ALPSBSS123	100	0.17	0.36		100	1	±20	±0.05	0.8	2	1		6	10	0.17					73		SOT-23	No	No
ALPSBSS123	100	0.17	0.36		100	1	±20	±0.05	0.8	2	1		6	10	0.17					73		SOT-23	No	Yes
ALPS01N10	100	1	1		80	10	±20	±0.1	1	2.5	0.25		310m	10	1		320m	4.5	0.5	505	9.5	SOT-23	No	No
ALPSL02N10	100	2.1	1	0.9	80	1	±20	±0.1	1	2.5	0.25	105m	126m	10	2	135m	169m	4.5	1	103	2.3	SOT-23-6	No	No
ALPS02N10	100	2.2	2.3		100	1	±20	±0.1	1	2.2	0.25	220m	286m	10	2	223m	312m	4.5	1	321	5.3	SOT-23	No	No
ALPSQ02DN10	100	2.4	2.5	0.92	80	1	±20	±0.1	1.2	2.5	0.25	111m	139m	10	2	155m	195m	4.5	1	103	2.5	SOP-08	No	No
ALPS03N10A	100	3	0.9		100	1	±20	±0.1	1	2	0.25	110m	160m	10	3	150m	170m	4.5	3	650	20	SOT-23	No	No
ALPSL03N10A	100	3	2		100	1	±20	±0.1	1	2.5	0.25	110m	140m	10	3	133m	186m	4.5	2	150	4.3	SOT-23-6	No	No





beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSM05N10	100	4.7	1.5	12.8	80	1	±20	±0.1	1.2	2.5	0.25	29m	36m	10	4.5	37m	48m	4.5	4	363	6.8	T2020P6	No	No
ALPST07N10A	100	7	4.5		100	1	±20	±0.1	1.5	2.5	0.25	110m	140m	10	3.5	160m	300m	4.5	2	206	4.3	SOT-223	No	No
ALPSQ07N10	100	7.5	1.6	20	80	1	±20	±0.1	1	3	0.25	13m	15.6m	10	8	20m	26m	4.5	6	1058	12.8	SOP-08	No	No
ALPSAB10N10	100	10	20	3.8	100	1	±20	±0.1	1.5	2.5	0.25	92m	120m	10	5	98m	137m	4.5	3	811	12	T3333P8	No	No
ALPSU10N10A	100	10	35.7		80	1	±20	±100	1	3	0.25	112m	135m	10	2	120m	145m	4.5	1	610	12	TO-252	No	No
ALPSAB10DN10	100	10.1	22	0.9	80	1	±20	±0.1	1.2	2.5	0.25	100m	125m	10	2	123m	160m	4.5	1	103	2.3	T3333P8 Dual	No	No
ALPSQ09N10	100	10.7	1.7	25	80	1	±20	±0.1	1	3	0.25	7m	8.4m	10	12	10m	13m	4.5	8	1932	41.8	SOP-08	No	No
ALPSAC18P9N10	100	18.9	24	11.3	80	1	±20	±0.1	1.2	3	0.25	29m	36m	10	10	39m	50m	4.5	6	363	6.8	T5060P8	No	No
ALPSU19P2N10	100	19.2	2.1	7	80	1	±20	±0.1	1	3	0.25	82m	100m	10	10	87m	113m	4.5	5	665	7.25	TO-252	No	No
ALPSAB23N10	100	23	29	52.6	100	1	±20	±0.1	1.5	2.5	0.25	24m	32m	4.5	10	26m	36m	4.5	10	3217	23	T3333P8	No	No
ALPSU30N10B	100	30	30	30	100	1	±20	±0.1	1	2.5	0.25	24m	32m	10	20	26m	36m	4.5	10	3217	23	TO-252	No	No
ALPSP30N10	100	30	63	52.6	100	1	±20	±0.1	1	2.5	0.25	24m	32m	10	20	26m	36m	4.5	10	3217	23	TO-220AB	No	No
ALPSAC31DN10	100	31	39	29	80	1	±20	±0.1	1	2.5	0.25	17m	21m	10	20	22m	29m	4.5	15	769	12.7	T5060P8 Dual	No	No
ALPSAC60N10M	100	40	14	200	100	1	±20	±0.1	1	3	0.25		18m	10	30					5500	100	T5060P8	No	No
ALPSAC38N10	100	47	88	29	80	1	±20	±0.1	1.2	2.5	0.25	15m	18.7m	10	20	18.7m	24.4m	4.5	15	769	12.7	T5060P8	No	No
ALPSAC48N10	100	48	108	61	80	1	±20	±0.1	1.2	2.3	0.25		8m	10	13.5					3320	45	T5060P8	No	No
ALPSAC58N10	100	58	50	36	80	1	±20	±0.1	1	3	0.25	7.6m	9.2m	10	20	11m	14m	4.5	20	1910	22	T5060P8	No	No
ALPSAC68N10	100	68	66	7.2	80	1	±20	±0.1	1	3	0.25	7m	8.4m	10	20	10m	13m	4.5	10	1930	22.8	T5060P8	No	No
ALPSU70N10	100	70	89	48	80	1	±20	±0.1	1.2	2.5	0.25	8.3m	10m	10	20	10.8m	13.5m	4.5	15	1535	26	TO-252	No	No
ALPSU78N10	100	78	2.1	36	80	1	±20	±0.1	1	3	0.25	8.1m	9.7m	10	20	11m	14m	4.5	20	1916	22	TO-252	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSAC80N10	100	80	60		100	1	±20	±0.1	1	2.5	0.25		8m	10	20						56	T5060P8	No	No
ALPSP102N10	100	102	125	16	80	1	±20	±0.1	1	2.5	0.25	5.3m	6.4m	10	20					3010	32.5	TO-220AB	No	No
ALPSAC102N10	100	102	130	110	80	1	±20	±0.1	2	4	0.25	5.3m	6.6m	10	20					2369	38	T5060P8	No	No
ALPSP95N10	100	112	192	101	80	1	±20	±0.1	2	4	0.25	6.8m	8.0m	10	20					1920	30	TO-220AB	No	No
ALPSB122N10	100	122	192	156	80	1	±20	±0.1	2	4	0.25	3.9m	4.6m	10	20					4176	72.7	TO-263	No	No
ALPSAC135N10	100	135	114	259	80	1	±20	±0.1	1.2	2.5	0.25	2.8m	3.4m	10	20	3.4m	4.3m	4.5	15	4646	78	T5060P8	No	No
ALPSAC142N10	100	142	125	162	80	1	±20	±0.1	2	4	0.25	3.6m	4.4m	10	20					4175	72.8	T5060P8	No	No
ALPSP143N10	100	143	192	600	80	1	±20	±0.1	2	4	0.25	4.3m	4.9m	10	20					4335	64	TO-220AB	No	No
ALPSB190N10	100	190	250	245	80	1	±20	±0.1	2	4	0.25	3m	3.6m	10	20					4398	66	TO-263	No	No
ALPSP213N10	100	213	312	726	100	1	±20	±0.1	2	4	0.25	3.2m	3.8m	10	20					5693	92	TO-220AB	No	No
ALPSB245N10	100	245	284	211	80	1	±20	±0.1	2	4	0.25	2.7m	3.5m	10	20					7424	123.6	TO-263	No	No
ALPSP258N10	100	258	313	694	80	1	±20	±0.1	2	4	0.25	2.1m	2.6m	10	20					7011	102	TO-220AB	No	No
ALPSB270N10	100	271	313	720	80	1	±20	±0.1	2	4	0.25	1.6m	2.0m	10	20					9623	155	TO-263	No	No
ALPSPW280N10	100	280	461	520	100	1	±20	±0.1	2	4	0.25	2m	2.5m	10	20					9030	150	TO-247	No	No
ALPQC300N10	100	300	500	2800	80	1	±20	±0.1	2	4	0.25	1.2m	1.4m	10	50					13574	167		No	No
ALPQC395N10	100	395	313	152	80	1	±20	±0.1	2	4	0.25	1.05m	1.3m	10	30					13000	231		No	No
ALPQC500N10	100	500	500	2900	100	1	±20	±0.1	2	4	0.25	1.4m	1.6m	10	50					14390	240		No	No
ALPSAC132N12	120	132	125	65	96	1	±20	±0.1	1	3	0.25	6m	7.2m	10	20	8.0m	10.4m	4.5	10	4849	47	T5060P8	No	No
ALPST16N15	150	4	2.5	1.6	150	1	±20	±0.1	1	3	0.25		150m	10	4		170m	4.5	4	900	22	SOT-223	No	No
ALPSQ04N15	150	4.1	2.5	16	120	1	±20	±0.1	2.5	4.5	0.25	52m	65m	10	4.1					306	5.3	SOP-08	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSAB14N15	150	14	28	20	120	1	±20	±0.1	2.5	4.5	0.25	54m	65m	10	7					306	5.3	T3333P8	No	No
ALPSAB15N15	150	15	28	13	120	1	±20	±0.1	2.5	4.5	0.25	45m	52m	10	7					540	7.6	T3333P8	No	No
ALPSU23N15	150	23	46	52	120	25	±20	±0.1	1	3	0.25		55m	10	15		60m	4.5	10	2650	60	TO-252	No	No
ALPSAC23N15	150	23	50	27	120	1	±20	±1	2	4	0.25	43m	48m	10	6					509	10.4	T5060P8	No	No
ALPSAC51N15	150	51	96	135	120	1	±20	±0.1	2.5	4.5	0.25	14.2m	16.8m	10	20					1603	23	T5060P8	No	No
ALPSAC75N15	150	75	125	231	120	1	±20	±0.1	2	4	0.25	8.5m	9.9m	10	20					2181	30	T5060P8	No	No
ALPSTAC99N15	150	99	174	484	120	1	±20	±0.1	2	4	0.25	6m	7.5m	10	20					3395	51	T5060P8	No	No
ALPSAC108N15	150	108	114	320	120	1	±20	±0.1	2	4	0.25	8.2m	9.8m	10	20					4800	57	T5060P8	No	No
ALPSP115N15	150	132	288	540	120	1	±20	±0.1	2.5	4.5	0.25	5.2m	6.5m	10	20					4320	68	TO-220AB	No	No
ALPSB185N15	150	180	347	889	120	1	±20	±0.1	2.5	4.5	0.25	3.9m	4.9m	10	20					6540	88	TO-263	No	No
ALPSP185N15	150	192	417	889	120	1	±20	±0.1	2.5	4.5	0.25	4.2m	5.2m	10	20					6540	88	TO-220AB	No	No
ALPSPW201N15	150	203	417	889	120	1	±20	±0.1	2.5	4.5	0.25	4m	4.9m	10	20					6540	88	TO-247	No	No
ALPSBA205N15	150	205	417	889	120	1	±20	±0.1	2.5	4.5	0.25	3.8m	4.8m	10	20					6570	88	TO-263-7	No	No
ALPSL005N20	200	0.5	0.3	19.86	200	1	±20	±10	1	3	0.25		2.8	10	0.25					102	3.7	SOT-23-6	No	No
ALPST04N20	200	4	0.8	90	200	10	±20	±0.1	1.3	3	0.25		1.05	10	1.8					206	7.6	SOT-223	No	No
ALPSU05N20B	200	5	46	45	200	5	±20	±0.1	2.5	4	0.25	530m	600m	10	2.5					228	18	TO-252	No	No
ALPSAC09P8N20	200	9.8	50	4	160	1	±20	±0.1	2	4	0.25	188m	225m	10	9					709	11	T5060P8	No	No
ALPSP630A	200	18	39	487	200	10	±30	±0.1	2	4	0.25		0.18	10	9					840	20	TO-220AB	No	No
ALPSPFA640B	200	18	39	487	200	10	±30	±0.1	2	4	0.25		0.18	10	9					840	20	ITO-220AB	No	No
ALPSU640A	200	18	80	340	200	5	±20	±0.1	2	4	0.25	140m	160m	10	9					1318	41	TO-252	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSB129N20	200	129	500	841	160	1	±20	±0.1	2.5	4.5	0.25	9.1m	10.7m	10	20					3318	48	TO-263	No	No
ALPSP129N20	200	129	500	841	160	1	±20	±0.1	2.5	4.5	0.25	9.4m	10.9m	10	20					3318	48	TO-220AB	No	No
ALPSPW130N20	200	130	500	841	160	1	±20	±0.1	2.5	4.5	0.25	8.8m	10.6m	10	20					3318	48	TO-247	No	No
ALPSK005N30	300	0.5	0.3		300	10	±30	±0.1	1	3	0.25		5	10	0.25					145	9.2	SOT-23	No	No
ALPSA008N50	500	0.8	3.3	6.5	500	10	±30	±0.1	2	4	0.25		12	10	0.4					80	7.2	SOT-89	No	No
ALPSPFA10N50	500	10	39	375	500	10	±30	±0.1	2	4	0.25		0.75	10	5					1180	24.4	ITO-220AB	No	No
ALPSPFA14N50A	500	14	40	714	500	10	±30	±0.1	2	4	0.25	0.42	0.5	10	7					1540	36	ITO-220AB	No	No
ALPSPFA18N50	500	18	44	1380	500	10	±30	±0.1	2	4	0.25		0.3	10	9					2880	77	ITO-220AB	No	No
ALPSPFA18NM50	500	18	52	490	500	10	±30	±0.1	2.5	4.5	0.25	0.22	0.28	10	9					920	42	ITO-220AB	No	No
ALPSKBSS127Z	600	0.021	0.3		600	0.1	±20	±0.1	1.4	2.6	0.008		500	10	0.016					7	7	SOT-23	Yes	No
ALPS601Q	600	0.185	0.5		25	7000	±20	±0.1					700		0.003					15	7.6	SOT-23-3	No	No
ALPS601ZQ	600	0.185	0.5		25	7000	±20	±0.1					700		0.003					12.4	0.144	SOT-23-3	Yes	No
ALPST01N60A	600	1	8	23	600	10	±30	0.1	2	4	0.25	12	15	10	0.5					134	8	SOT-223	No	No
ALPSU04N60	600	4	48	194	600	10	±30	±0.1	2	4	0.25		2.3	10	2					560	13	TO-252	No	No
ALPSU04N60	600	4	72	120	600	1	±30	±0.1	2	4	0.25	1.95	2.3	10	2					512	13.5	TO-252	No	No
ALPSPFA15NM60	600	15	31	490	600	10	±30	±0.1	2.5	4.5	0.25		0.38	10	7.5					920	35	ITO-220AB	No	No
ALPSPFA21NM60	600	21	34	706	600	10	±30	±0.1	2.5	4.5	0.25		0.19	10	10.5					1600	54	ITO-220AB	No	No
ALPSPFA30NM60	600	30	40	1064	600	10	±30	±0.1	2.5	4.5	0.25		0.13	10	15					2520	85	ITO-220AB	No	No
ALPSP04N65	650	4	36	61	650	1	±30	±0.1	2	4	0.25	2.25	2.6	10	2					597	15	TO-220AB	No	No
ALPSU04N65	650	4	72	120	650	1	±30	±100	2	4	0.25	2.2	2.5	10	2					512	13.5	TO-252	No	No



beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub>	Max.	V <sub>GS</sub>	Max.	Min.	Max.	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Max.	@V <sub>GS</sub>	@I <sub>D</sub>	Typ.	Typ.			
ALPSPFA06N65	650	6	35	245	650	10	±30	±0.1	2	4	0.25		1.9	10	3					650	15.5	ITO-220AB	No	No
ALPSU07N65D	650	7	69	245	650	1	±30	±0.1	2	4	0.25	1.2	1.4	10	3.5					1089	27	TO-252	No	No
ALPSP07N65	650	7	125	281.3	650	10	±30	±0.1	2	4	0.25		1.3	10	3.5					870	22	TO-220AB	No	No
ALPSPFA08N65	650	8	36	320	650	10	±30	±0.1	2	4	0.25		1.2	10	4					1040	27	ITO-220AB	No	No
ALPSU09P5N65	650	9.5	38	150	650	1	±30	±0.1	2.5	4.5	0.25	510m	600m	10	3.5					443	10.5	TO-252	No	No
ALPSU11N65	650	11	60	415	650	10	±30	±0.1	2.5	4.5	0.25	430m	520m	10	5.5					770	27	TO-252	No	No
ALPSB11P2NM65	650	11.2	145	180	650	1	±30	±0.1	2.5	4.5	0.25	364m	430m	10	10					703	18.4	TO-263	No	No
ALPSPF12N65A	650	12	30	605	650	1	±30	±0.1	2	4	0.25	0.64	0.74	10	6					2078	47	ITO-220AB	No	No
ALPSPFA18NM65	650	18	33	151	650	10	±30	±0.1	2.5	4.5	0.25	280m	330m	10	9					1115	44	ITO-220AB	No	No
ALPSPFA20NM65	650	20	34	265	650	10	±30	±0.1	2.5	4.5	0.25		220m	10	10					1370	47	ITO-220AB	No	No
ALPSPF20NM65	650	20	36	405	650	1	±30	±0.1	2.5	4.5	0.25	170m	190m	10	10					1560	38	ITO-220AB	No	No
ALPSAH20NM65	650	20	63.5	265	650	10	±30	±0.1	2.5	4.5	0.25		220m	10	10					1370	47	T8080P4	No	No
ALPSB20NM65	650	20	189	405	650	1	±30	±0.1	2.5	4.5	0.25	170m	190m	10	10					1560	38	TO-263	No	No
ALPSPW20NM65	650	20	189	405	650	1	±30	±0.1	2.5	4.5	0.25	168m	190m	10	10					1560	38	TO-247	No	No
ALPSPW32NM65	650	32	347	500	650	10	±30	±0.1	2.5	4.5	0.25	95m	110m	10	10					2869	72	TO-247	No	No
ALPSPW43N65	650	43	338	1125	650	1	±20	±0.1	3	5	0.25	70m	90m	10	30					4210	95	TO-247	No	No
ALPSPW71NM65	650	71	500	1125	650	5	±20	±0.1	3	5	0.25	35m	40m	10	32.5					6843	163	TO-247	No	No
ALPSB12N70K	700	12	140	170	700	10	±30	±0.1	2	4	0.25	0.7	0.83	10	6					2000	40	TO-263	No	No
ALPSP05N80A	800	5	63	225	800	1	±20	±0.1	2.5	4.5	0.25	800m	900m	10	2.5					541	10.7	TO-220AB	No	No
ALPSPF10N80A	800	10	39	168	800	10	±30	±0.1	3	5	0.25		1.1	10	5					1823	33.6	ITO-220AB	No	No



Beyond boundaries...

# MOSFET

Alpinesemi™ Part Number	BV <sub>DSS</sub>	I <sub>D</sub>	P <sub>D</sub>	E <sub>AS</sub>	I <sub>DSS</sub>	I <sub>DSS</sub>	I <sub>GSS</sub>	I <sub>GSS</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	V <sub>GS(th)</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)1</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	R <sub>DS(on)2</sub>	C <sub>iss</sub>	Q <sub>g</sub>	Package	ESD	AEC Q1
	(V)	(A)	(W)	(mJ)	@V <sub>DSS</sub> (V)	Max. (μA)	V <sub>GS</sub> (V)	Max. (μA)	Min. (V)	Max. (V)	@I <sub>D</sub> (mA)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (Ω)	Max. (Ω)	@V <sub>GS</sub> (V)	@I <sub>D</sub> (A)	Typ. (pF)	Typ. (nC)			
ALPSPFA12N80	800	12	40	122	800	10	±30	±0.1	3	5	0.25	0.65	0.78	10	6					2283	37	ITO-220AB	No	No
ALPSU03N90	900	3	44	72	900	25	±30	±0.1	3	5	0.25		6.7	10	1.5					388	8	TO-252	No	No
ALPSU04N90A	900	4	70	125	900	1	±30	±0.1	3	4	0.25	3	3.5	10	2					674	27	TO-252	No	No
ALPSPFA05N90	900	5	36	240	900	10	±30	±0.1	3	5	0.25		3.3	10	2.5					780	14	ITO-220AB	No	No
ALPSPFA09N90	900	9	240	900	900	10	±30	±0.1	3	5	0.25		1.2	10	4.5					1870	215	ITO-220AB	No	No
ALPSPW04N150	1500	4	140	721	1500	10	±30	±0.1	3	5	0.25		6.5	10	2					1310	40	TO-247	No	No
ALPS3439KDW1	20 / -20	0.75 / -0.66			±20	±1	±20	±10	0.35 / -0.35	1.1 / -1.1	0.25	190m / 450m	380m / 520m	4.5 / -4.5	0.65 / -1	260m / 650m	450m / 780m	2.5 / -2.5	0.55 / -0.8	79 / 113		SOT-363	Yes	No
ALPSV01NP02E	20 / -20	1 / -0.69	0.42		±16	±1	±12	±10	0.5 / -0.5	1 / -1	0.25	220m / 500m	250m / 600m	4.5 / -4.5	0.6 / -0.43	390m / 800m	585m / 1200m	1.8 / -1.8	0.35 / -0.01	40 / 57.8	0.55 / 0.6	SOT-563	Yes	No
ALPSL2003	20 / -20	3.6 / -3.0	1.25		±20	±1	±12	±0.1	0.4 / 0.4	1.3 / 1.2	0.25 / 0.25	26m / 68m	35m / 85m	4.5 / -4.5	3.2 / -3.0	32m / 90m	45m / 120m	2.5 / -2.5	2.2 / -2.0	396 / 572	4.1 / 7	SOT-23-6	No	No
ALPSL2606	20 / -20	4.5 / -3.5	1.25		±20	±1	±12	±0.1	0.4 / 0.4	1.3 / 1.2	0.25 / 0.25	20m / 56m	28m / 70m	4.5 / -4.5	4.5 / -3.5	25m / 73m	36m / 95m	2.5 / -2.5	3.5 / -3.0	468 / 686	9.4 / -9.7	SOT-23-6	Yes	No
ALPSM2116A	20 / -20	6 / -5	1.3		±16	±1	±12	±0.1	0.5 / -0.1	1 / -1	0.25	21m / 80m	28m / 100m	4.5 / -4.5	4.5 / -3.5	32m / 98m	40m / 120m	2.5 / -2.5	3 / -2	512 / 687	5.9 / 17.8	T2020P6	No	No
ALPSAT15NP03	30 / -30	15 / -10	3.8 / 4.3	20 / 16	30 / -30	1 / -1	±20	±0.1	1.0 / -1.0	2.5 / -2.5	0.25 / -0.25	8.8m / 21m	11m / 26.3m	10 / -10	15 / -10	13.6m / 31m	17.7m / 40.3m	4.5 / -4.5	10 / -5	1116 / 1240	13.3 / 24	T5060P8 Dual	No	No
ALPSL8958	30 / -30	4.5 / -3.5	1.25		±24	±1	±20 / ±24	±0.1 / ±1.0	1.0 / -1.0	3.0 / -3.0	0.25	24m / 56m	30m / 70m	10 / -10	4.5 / -3.5	35m / 73m	44m / 95m	4.5 / -4.5	3.5 / -3.0	402 / 490	8.4 / 10	SOT-23-6	No	No
ALPSQ4606A	30 / -30	6 / -5	2		±30	±1	±20	±0.1	1.0 / -1.0	2.2 / -2.4	0.25	17m / 40m	29m / 60m	10 / -10	6 / -4.2	27m / 60m	40m / 70m	4.5 / -4.5	5 / -3.5	526 / 719	12.22 / 14.23	SOP-08	No	No
ALPSQ10NP04	40 / -40	10 / -10	3.4 / 7.5	19 / 27.5	40 / -40	1 / -1	±20	±0.1	1.0 / -1.0	2.5 / -2.5	0.25	15m / 34m	20m / 44m	10 / -10	10 / -8					980 / 1034	44136	SOP-08	No	No
ALPSBSS8402DW	60 / -50	0.115 / -0.130			60 / -50	±1	±20	±10	1.0 / -0.8	2.5 / -2.0	0.25 / -1	3 / ---	7.5 / 10	5 / -5	0.65 / -0.1					22 / 45(Max.)		SOT-363	Yes	No

## DISCLAIMER

The product information and the selection guide facilitates the selection of the ALPINESEMI™'s Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review the Data sheet(s) so as to confirm that the Device(s) meets functionality parameters for your application. The information furnished on the Data Sheet and the ALPINESEMI™'s Web Site is believed to be accurate and reliable at the time of preparation of this document. ALPINESEMI™ however, does not assume any inaccuracies that may arise when the components are mounted and removed. Furthermore, ALPINESEMI™ does not assume liability whatsoever, arising out of the application or the use of any of ALPINESEMI™'s product(s). Neither, does it convey any license under its patent rights nor the rights of others. These products are not guaranteed for use in life saving/support appliances or systems. ALPINESEMI™'s customers using these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and ALPINESEMI™ will not be responsible in any way(s) for any damage(s) resulting from such use.

Please check the website [www.alpinesemi.com](http://www.alpinesemi.com) for continues updates and revision of datasheets.

DESIGN CHANGES: ALPINESEMI™ strives for continuous improvement and reserves the right to change the specifications of its products without prior notice. ALPINESEMI™ reserves the right to discontinue product lines without prior notice. Any product selection is a recommendation based on best understanding of such product(s) by our engineers. However, buyers are advised to rely on their own judgment for such selection of the products.

ALPINESEMI™ makes no warranty, representation or guarantee regarding the suitability of its products for any particular applications. Neither does ALPINESEMI™ assume any liability arising out of the applications nor the use of such products. ALPINESEMI™ specifically disclaims all liabilities either consequential or incidental.

All rights of the product and datasheet are reserved to ALPINESEMI™.

All logos and information provided in the datasheets are for reference only. Any registered and/or trademark/logos belonging to respective companies be the property of those companies. ALPINESEMI™ extends the courtesy to them, if any of the information found in its datasheet.

### Component Disposal Instructions

1. ALPINESEMI™ Semiconductor Devices are RoHS compliant and hence customers are requested to dispose as per the prevailing Environmental Legislation put forth in their specific country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).



ALPINESEMI

[sales@alpinesemi.com](mailto:sales@alpinesemi.com)

[www.alpinesemi.com](http://www.alpinesemi.com)