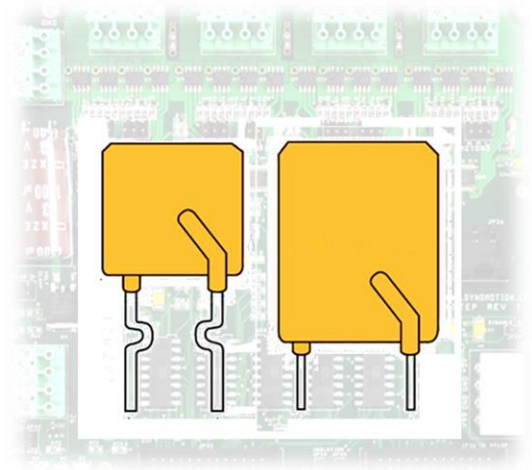


ADVANCED POWER MOSFET

DESCRIPTION:



ALPSFRUXXXX the rated voltage of 30V with improved gate charge, which extend safe operating to meet wide range of application like Switching Mode Power Supplies (SMPS), liner power supplies and many more.

FEATURES:

- Rated voltage of 30V to meet wide-ranging applications.
- RoHS compliant and recognized by UL.
- Avalanche Rugged Technology
- Rugged Gate Oxide Technology
- Lower Input Capacitance
- Improved Gate Charge
- Extended Safe Operating Area

APPLICATIONS:

- Automotive electronics
- Lightning control
- Stepper motor control
- Switching devices in electronic control units
- Power converters in modern electric components
- Robotics

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise specified									
PART NUMBER	Hold Current	Trip current	Maximum voltage at rated current	Maximum fault current at rated voltage	Maximum time to trip(s) at assigned current		Typical power dissipation	Minimum device resistance	Maximum device resistance
	I_H	I_T	V_{max}	I_{max}	Current (A)	Time (s)	P_{dtyp}	R_{min}	R_{max}
	A	A	V	A			W	Ω	Ω
ALPSFRU0900	0.90	1.80	30	40	4.50	7.1	0.91	0.07	0.12
ALPSFRU1100	1.10	2.20	30	40	5.50	6.6	1.00	0.05	0.10
ALPSFRU1350	1.35	2.70	30	40	6.75	7.3	1.11	0.04	0.08
ALPSFRU1600	1.60	3.20	30	40	8.00	8.0	1.20	0.03	0.07
ALPSFRU1850	1.85	3.70	30	40	9.25	8.7	1.27	0.03	0.06
ALPSFRU2500	2.50	5.00	30	40	12.50	10.3	1.34	0.02	0.04
ALPSFRU3000	3.00	6.00	30	40	15.00	10.8	2.00	0.02	0.05
ALPSFRU4000	4.00	8.00	30	40	20.00	12.7	2.50	0.01	0.03
ALPSFRU5000	5.00	10.00	30	40	25.00	14.5	3.00	0.01	0.03
ALPSFRU6000	6.00	12.00	30	40	30.00	16.0	3.50	0.005	0.02
ALPSFRU7000	7.00	14.00	30	40	35.00	17.5	3.80	0.005	0.02
ALPSFRU8000	8.00	16.00	30	40	40.00	18.8	4.00	0.005	0.02
ALPSFRU9000	9.00	18.00	30	40	40.00	20.0*	4.20	0.005	0.01

Note:

I_H = Hold current: maximum current at which the device will not trip at 25°C still air.

I_T = Trip current: minimum current at which the device will always trip at 25°C still air.

V_{max} = Maximum voltage device can withstand without damage at rated current.

I_{max} = Maximum fault current device can withstand without damage at rated voltage.

T_{trip} = Maximum time to trip(s) at assigned current.

P_{dtyp} = Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

R_{min} = Minimum device resistance at 25°C prior to tripping.

R_{max} = Maximum device resistance at 25°C prior to tripping.

THERMAL DERATING

Thermal Derating [Hold Current (A) at Ambient Temperature (°C)]									
PART NUMBER	Maximum Ambient Operating Temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
ALPSFRU0900	1.40	1.25	1.10	0.90	0.75	0.69	0.65	0.60	0.50
ALPSFRU1100	1.75	1.52	1.33	1.10	0.99	0.90	0.80	0.73	0.63
ALPSFRU1350	2.15	1.94	1.70	1.35	1.20	1.14	1.00	0.90	0.81
ALPSFRU1600	2.49	2.21	1.94	1.60	1.42	1.31	1.19	1.03	0.88
ALPSFRU1850	2.87	2.59	2.28	1.85	1.63	1.52	1.33	1.21	1.05
ALPSFRU2500	3.82	3.44	3.03	2.50	2.17	2.00	1.81	1.59	1.39
ALPSFRU3000	4.55	4.10	3.60	3.00	2.65	2.51	2.24	2.01	1.74
ALPSFRU4000	6.00	5.40	4.74	4.00	3.47	3.28	2.82	2.63	2.26
ALPSFRU5000	7.44	6.68	5.80	5.00	4.30	4.03	3.58	3.22	2.77
ALPSFRU6000	8.90	7.99	7.08	6.00	5.13	4.82	4.27	3.84	3.30
ALPSFRU7000	10.35	9.30	8.21	7.00	5.95	5.58	4.96	4.46	3.84
ALPSFRU8000	11.60	10.60	9.35	8.00	6.79	6.36	5.64	5.07	4.36
ALPSFRU9000	13.25	11.90	10.49	9.00	7.53	7.12	6.32	5.69	4.88

RELIABILITY TEST

TEST	TEST CONDITIONS	ACCEPT/REJECT CRITERIA
Resistance	In still air @ 25°C	$R_{min} \leq R \leq R_{max}$
Time to Trip	Specified current, V_{max} , 25°C	$T \leq$ maximum Time to Trip
Hold Current	30min, at I_H	No trip
Trip Cycle Life	V_{max} , I_{max} , 100 cycles	No arcing or burning
Trip Endurance	V_{max} , 24 hours	No arcing or burning

TYPICAL DEVICE CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

A = ALPSFRU0900
 B = ALPSFRU1100
 C = ALPSFRU1350
 D = ALPSFRU1600
 E = ALPSFRU1850
 F = ALPSFRU2500
 G = ALPSFRU3000
 H = ALPSFRU4000
 I = ALPSFRU5000
 J = ALPSFRU6000
 K = ALPSFRU7000
 L = ALPSFRU8000
 M = ALPSFRU9000

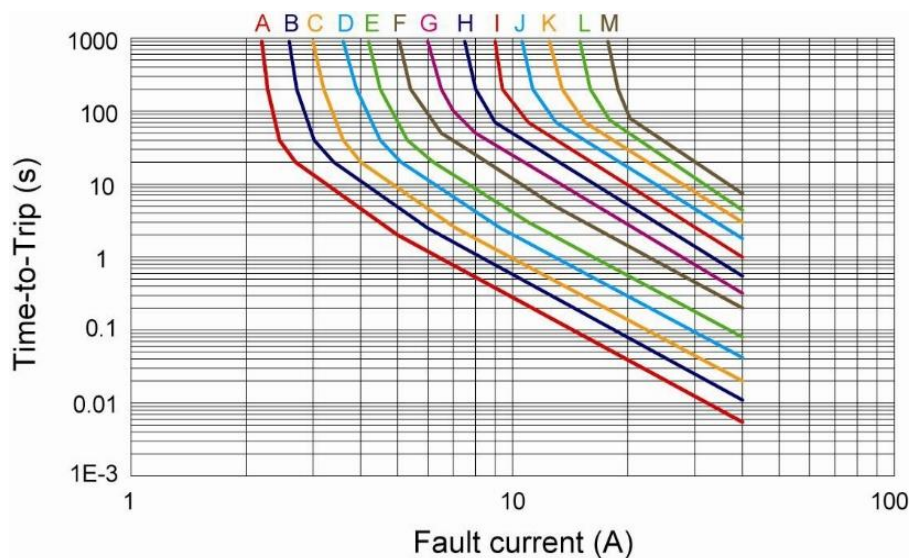
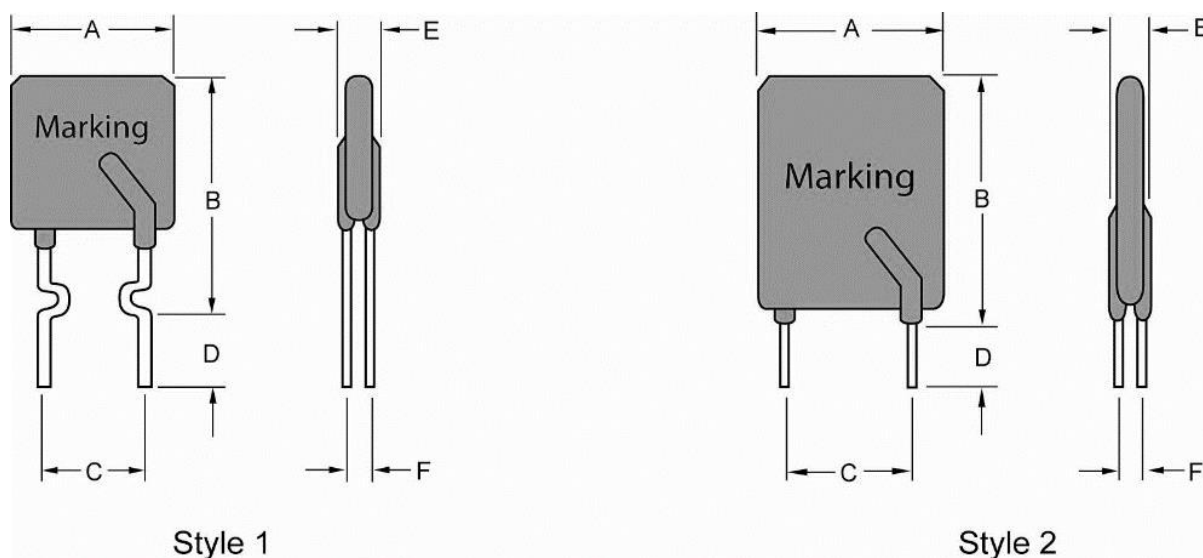


Fig.1 TYPICAL TIME-TO-TRIP

PRODUCT DIMENSIONS IN MILLIMETER (mm)


ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise specified								
PART NUMBER	A	B	C	D	E	F	LEAD	
	Max	Max	Typ.	Min	Max	Typ.	Style	Size (Φ)
ALPSFRU0900	6.0	13.8	5.1	7.6	3.0	0.9	1	0.6
ALPSFRU1100	7.8	14.0	5.1	7.6	3.0	0.9	1	0.6
ALPSFRU1350	8.9	14.0	5.1	7.6	3.0	0.9	1	0.6
ALPSFRU1600	9.7	17.0	5.1	7.6	3.0	0.9	1	0.6
ALPSFRU1850	10.7	17.0	5.1	7.6	3.0	0.9	1	0.6
ALPSFRU2500	11.7	19.0	5.1	7.6	3.0	0.9	1	0.6
ALPSFRU3000	11.7	21.0	5.1	7.6	3.0	1.2	2	0.8
ALPSFRU4000	14.2	23.0	5.1	7.6	3.0	1.2	2	0.8
ALPSFRU5000	14.4	28.0	10.2	7.6	3.0	1.2	2	0.8
ALPSFRU6000	16.7	28.0	10.2	7.6	3.0	1.2	2	0.8
ALPSFRU7000	19.4	29.6	10.2	7.6	3.0	1.2	2	0.8
ALPSFRU8000	21.6	31.9	10.2	7.6	3.0	1.2	2	0.8
ALPSFRU9000	24.5	36.4	10.2	7.6	3.0	1.2	2	0.8



beyond boundaries...

ALPSFRUXXXX
MOSFET

CUSTOMER NOTE:

DISCLAIMER

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2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).



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