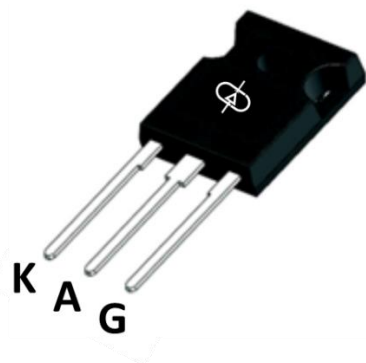


65A, 1200V STANDARD SCRS THYRISTOR

DESCRIPTION:



The ALPTS6512T80 is an 65A, 1200V Standard SCRS Thyristor and it Low on-state voltage device in small package with Highly dv/dt.

FEATURES:

- $I_{T(RMS)} = 65A$, $V_{DRM}/V_{RRM} = 1200V$, $I_{GT} = 80mA$
- Highly dv/dt.
- Small package
- Low on-state voltage
- RoHS compliant & halogen-free.
- Suffix “-H” indicated Halogen Free part, ex. ALPTS6512T80-H

APPLICATIONS:

- Domestic lighting.
- Domestic heating.
- Motor speed controllers.

MECHANICAL CHARACTERISTICS

- Epoxy: UL94-V0 rated flame retardant.
- Case: Molded plastic, TO-247
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position: Any.

MAXIMUM RATINGS

MAXIMUM RATINGS @ $T_A = 25^\circ\text{C}$ unless otherwise specified				
PARAMETER	CONDITION	SYMBOL	RATINGS	UNIT
RMS on-state current (full sine wave)	$T_C=100^\circ\text{C}$	$I_{T(RMS)}$	65	A
Non repetitive surge peak on-state current	$F=50\text{HZ}$, $t=10\text{ms}$	I_{TSM}	650	A
I^2t value for fusing	$T_P=10\text{ms}$	I^2t	1250	A^2s
Critical rate of rise of on-state current	$F=60\text{HZ}$, $T_J=125^\circ\text{C}$	di/dt	100	$\text{A}/\mu\text{s}$
Peak gate current	$T_P=20\mu\text{s}$, $T_J=125^\circ\text{C}$	I_{GM}	8	A
Average gate power dissipation	$T_J=125^\circ\text{C}$	$P_{G(AV)}$	1	W
Operating Junction Temperature Range		T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-40 to +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS @ TA = 25 °C unless otherwise specified

PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Gate trigger current	$V_D=12V, I_T=0.1A$	I_{GT}	≤ 80	mA
Gate trigger voltage	$V_D=12V, I_T=0.1A$	V_{GT}	≤ 1.5	V
Holding current	$V_D=12V, I_T=0.1A$	I_H	≤ 150	mA
Latching current	$V_D=12V, I_T=0.1A$	I_L	≤ 90	mA
Rise of off- state voltage	$V_D=67\%V_{DRM}$	dv/dt	≥ 400	V/ μ S
Peak on-state voltage	$I_T=130A$	V_{TM}	≤ 1.7	V
Peak repetitive forward blocking current	$V_{RRM}=V_{DRM}, T_j = 25^{\circ}C$	I_{DRM}	≤ 10	μ A
	$V_{RRM}=V_{DRM}, T_j = 150^{\circ}C$	I_{RRM}	≤ 4	mA

THERMAL RESISTANCES

PARAMETER	SYMBOL	VALUE	UNIT
Junction to case (AC)	$R_{th(j-c)}$	0.27	$^{\circ}C/W$

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

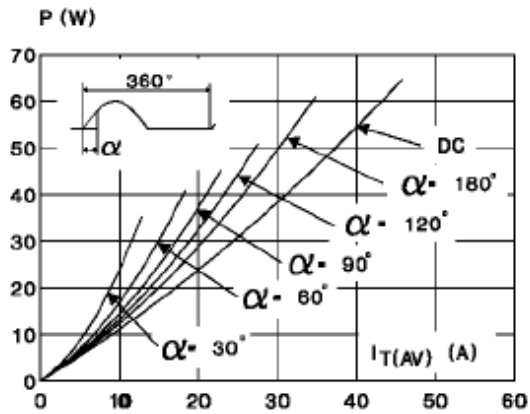


Fig.1 MAXIMUM POWER DISSIPATION VS. AVERAGE ON-STATE CURRENT

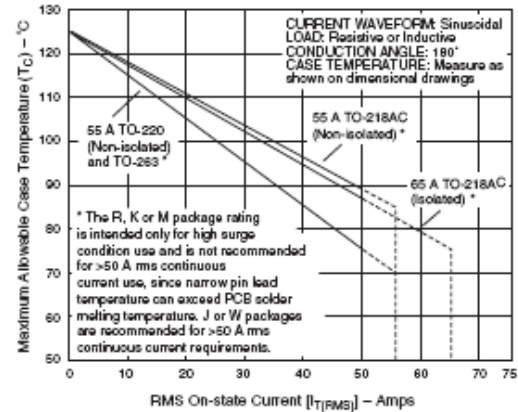


Fig.2 $I_{T(AV)}$ ON-STATE CURRENT VS. T_L

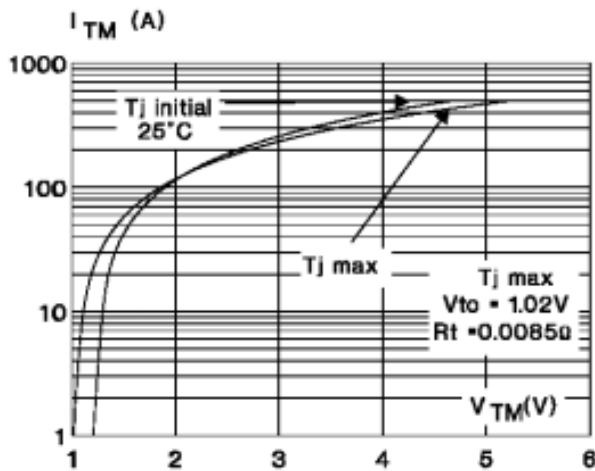


Fig.3 ON-STATE CHARACTERISTICS

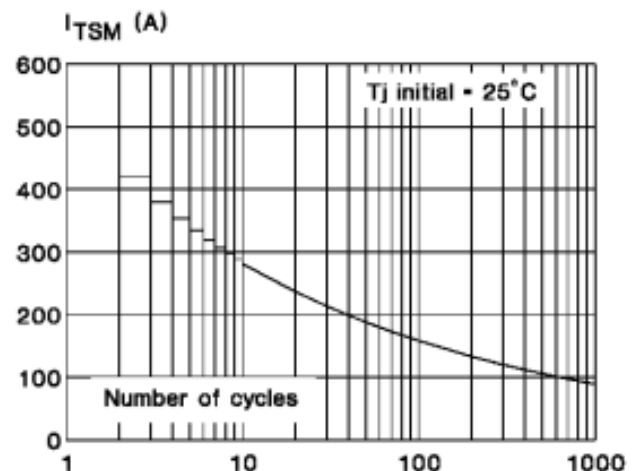


Fig.4 SURGE PEAK ON-STATE CURRENT VS. NUMBER CYCLES

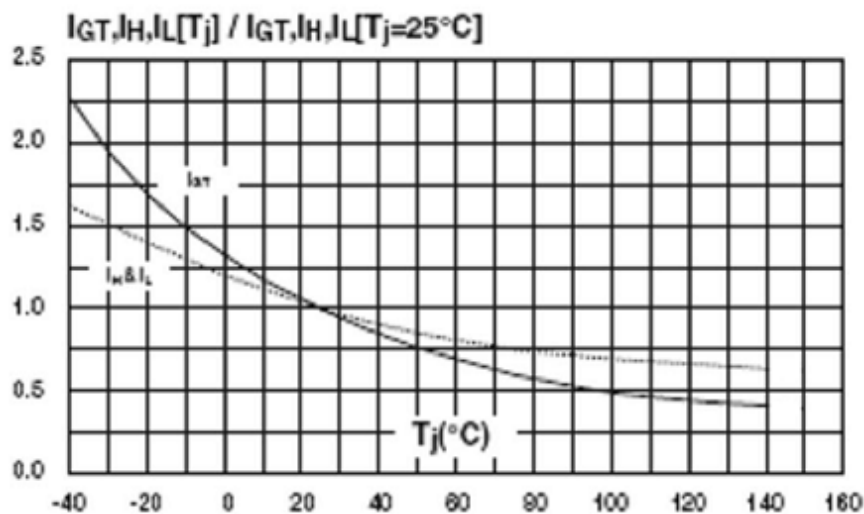
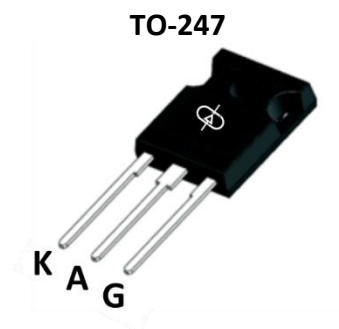


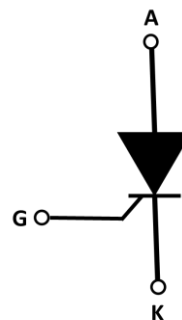
Fig.5 RELATIVE VARIATION OF GATE TRIGGER CURRENT, HOLDING CURRENT AND LATCHING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL VALUE)

PINNING INFORMATION

SIMPLIFIED OUTLINE

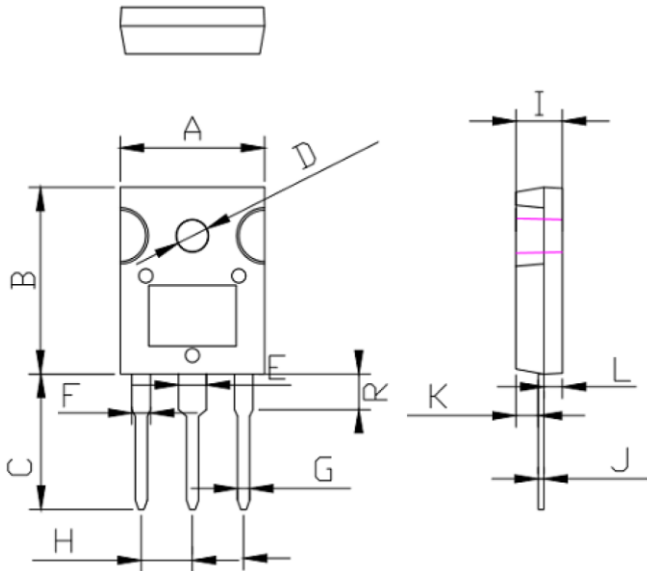


SCHEMATIC DIAGRAM



PACKAGE INFORMATION

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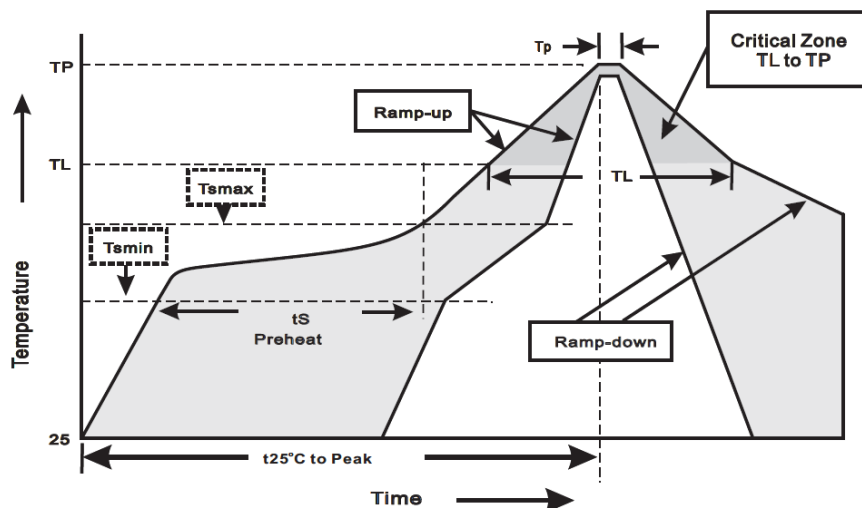


SYMBOL	OUTLINE DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	TYP.	MAX	MIN	TYP.	MAX
A	15.45	15.50	15.55	0.608	0.610	0.612
B	19.90	20.00	20.10	0.783	0.787	0.791
C	14.40	14.50	14.60	0.567	0.571	0.575
D	3.30	3.50	3.60	0.130	0.138	0.142
E	2.95	3.00	3.05	0.116	0.118	0.120
F	1.95	2.00	2.05	0.077	0.079	0.081
G	1.20	1.30	1.40	0.047	0.051	0.055
H	5.40	5.50	5.60	0.213	0.217	0.220
I	4.95	5.00	5.05	0.195	0.197	0.199
J	0.58	0.60	0.62	0.023	0.024	0.024
K	2.30	2.40	2.50	0.091	0.094	0.098
L	1.90	2.00	2.10	0.075	0.079	0.083
R	3.60	3.80	4.00	0.142	0.150	0.157

SOLDERING PARAMETERS

SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES

1. Storage environment: Temperature=5 °C~40 °C Humidity=55% ±25%
2. Reflow soldering of surface-mount devices



3. Reflow soldering

PROFILE FEATURE	SOLDERING CONDITION
Average ramp-up rate (T_L to T_P)	<3 °C/sec
Preheat	
- Temperature Min (T_{smin})	150 °C
- Temperature Max (T_{smax})	200 °C
- Time (min to max) (t_s)	60 ~ 120 sec
T_{smax} to T_L	
- Ramp-upRate	<3 °C/sec
Time maintained above:	
- Temperature (T_L)	217 °C
- Time(t_L)	60 ~ 260 sec
Peak Temperature (T_P)	255 °C-0/+5 °C
Time within 5 °C of actual Peak Temperature(t_P)	10 ~ 30 sec
Ramp-down Rate	<3 °C/sec
Time 25 °C to Peak Temperature	<6 minutes



beyond boundaries...

ALPTS6512T80

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CUSTOMER NOTE:

DISCLAIMER

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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).



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