

S P E C I F I C A T I O N

POWER THYRISTOR FOR INVERTER APPLICATIONS

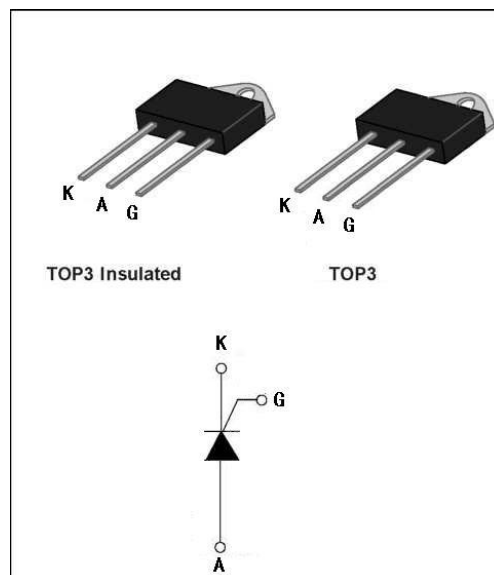
Inverter Grade Thyristors Version Type : PSTS6035

Features

- RoHS Compliant
- All diffused design
- Glass-passivated chip
- Guaranteed high dV/dt
- Guaranteed high dI/dt
- High surge current capability
- Low thermal impedance
- High speed performance , t_q is less than 35 μ Sec
- Electrically-isolated package
- High voltage capability — 200 V to 1000 V

Typical Applications

- Inverters
- Choppers
- Induction heating
- All types of force-commutated converters



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	35	A
$V_{DRM/RRM}$	200/400/600 / 800 / 1000	V
V_{TM}	1.8	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	- 40 to +150	$^{\circ}C$
Operating junction temperature range		T_j	- 40 to +125	$^{\circ}C$
Repetitive Peak Off-state Voltage	$T_j=25^{\circ}C$	V_{DRM}	200/400/600 / 800 / 1000	V
Repetitive Peak Reverse Voltage	$T_j=25^{\circ}C$	V_{RRM}	200/400/600 / 800 / 1000	



Non repetitive Surge Peak Off-state Voltage	$t_p=10\text{ms}, T_j=25^\circ\text{C}$	V_{DSM}	$V_{DRM}+100$	V
Non repetitive Peak Reverse Voltage		V_{RSM}	$V_{RRM}+100$	
RMS on-state current (full sine wave)	TO - P3 $T_c=80^\circ\text{C}$	$I_{T(RMS)}$	35	A
	TG - C $T_c=90^\circ\text{C}$			
Non repetitive surge peak on-state current (full cycle, $T_j=25^\circ\text{C}$)	$f = 60\text{ Hz } t=16.7\text{ms}$	I_{TSM}	500	A
	$f = 50\text{ Hz } t=20\text{ms}$		425	
I^2t Value for fusing	$t_p=10\text{ms}$	I^2t	1035	A^2s
Critical rate of rise of on-state current $I_G=2 \times I_{GT}$, $t_r < 100\text{ ns}$, $f = 120\text{Hz}$, $T_j=125^\circ\text{C}$		di/dt	150	$\text{A}/\mu\text{s}$
Peak gate current $t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$		I_{GM}	3.5	A
Peak Gate Power Dissipation $t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$		P_{GM}	35	W
Average gate power dissipation $T_j=125^\circ\text{C}$		$P_{G(AV)}$	0.8	W

ELECTRICAL CHARACTERISTICS($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition		Limits	Unit
			BW(B)	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	MAX.	40	mA
V_{GT}		MAX.	1.5	V
V_{GD}	$V_D=V_{DRM} R_L=3.3\text{K}\Omega T_j=125^\circ\text{C}$	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	MAX.	100	mA
I_H	$I_T = 200\text{mA}$	MAX.	50	mA
dV/dt	$V_D=67\%V_{DRM}$ gate open $T_j=125^\circ\text{C}$	MIN.	400	$\text{V}/\mu\text{s}$
T_q	$I_T = 1\text{A}$, $dV/dt = 20\text{V/s}$, $di/dt = 10\text{A/s}$	MAX.	35	μs
T_{gt}		MAX.	2	μs

STATIC CHARACTERISTICS

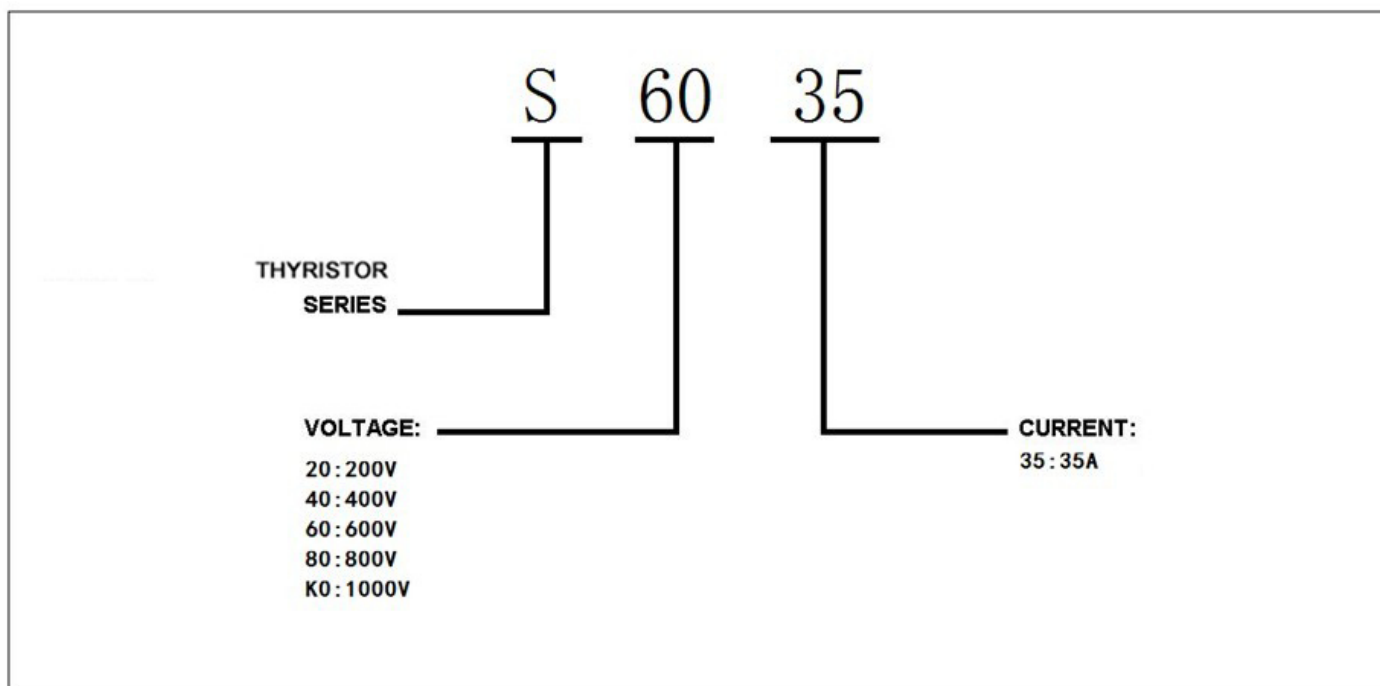
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=6\text{A}, t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.80	V
I_{DRM} I_{RRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	μA
		$T_j=125^\circ\text{C}$	2	mA



THERMAL RESISTANCES

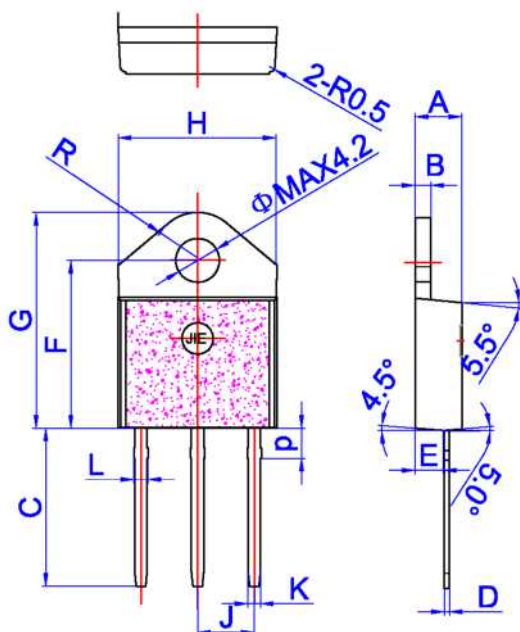
Symbol	Parameter		Value	Unit
$R_{th}(J-C)$	Junction to Case(AC)	TO-P3	0.9	$^{\circ}C/W$

ORDERING INFORMATION



PACKAGE MECHANICAL DATA

T0-P3 insulated Package



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.6	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.4		21.1	0.815		0.831
H	15.1		15.5	0.594		0.610
J	5.4		5.65	0.213		0.222
K	1.2		1.4	0.047		0.055
L	1.35		1.50	0.053		0.059
P	2.8		3.0	0.110		0.118
R		4.6			0.181	

