

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

Rating	Symbol	S2600B	S2600D	S2600M	Unit
Non-repetitive peak reverse voltage <sup>1</sup> (gate open)	$V_{RSOM}$	250	500	700	V
Non-repetitive peak off-state voltage <sup>1</sup> (gate open)	$V_{DSOM}$	250	500	700	V
Repetitive peak reverse voltage <sup>1</sup> (gate open)	$V_{RROM}$	200	400	600	V
Repetitive peak off-state voltage <sup>1</sup> (gate open)	$V_{DROM}$	200	400	600	V
Peak surge (non-repetitive) on-state current 60Hz (sinusoidal) 50Hz (sinusoidal)	$I_{TSM}$	100 85	100 85	100 85	A
Peak repetitive on-state current (Duty factor = 0.1%, $T_c = 75^\circ\text{C}$ ) Pulse duration = 5 $\mu$ (min), 20 $\mu$ s(max)	$I_{TRM}$	100	100	100	A
Rate of change of on-state current $V_{DM} = V_{DROM}$ , $I_{GT} = 200\text{mA}$ , $t_r = 0.5\mu\text{s}$	di/dt	200			A/ $\mu$ s
Fusing current $T_J = -65$ to $+100^\circ\text{C}$ , $t = 1$ to 8.3ms	$I^2t$	40			A <sup>2</sup> s
Gate power dissipation <sup>2</sup> Peak forward Average (averaging time = 10ms max)	$P_{GM}$ $P_{G(AV)}$	40 0.5			W
Temperature range Storage Operating	$T_{stg}$ $T_c$	-65 to +150 -65 to +100			$^\circ\text{C}$
Lead temperature (during soldering) <sup>3</sup> For 10s max. for case or leads		225			$^\circ\text{C}$

- These values do not apply if there is a positive gate signal. Gate must be open, terminated or have negative bias
- Any values of peak gate current or peak gate voltage that yield the maximum gate power are permissible.
- When these devices are soldered directly to the heat sink, a 60/400 solder should be used. Case heating time should be a minimum, sufficient to allow the solder to flow freely.

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

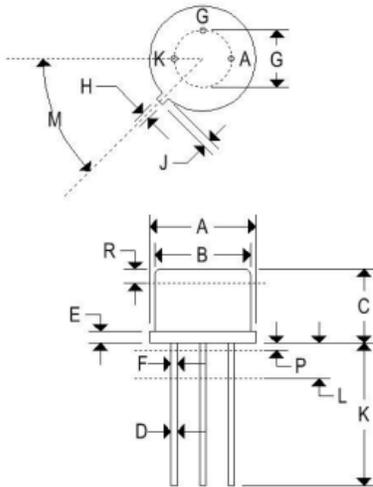
Characteristic	Symbol	Limits			Units
		Min	Typ	Max	
Peak off-state current Gate open, $T_c = 100^\circ\text{C}$ , forward, $V_D = V_{DROM}$ Reverse	$I_{DOM}$	- -	0.1 0.05	0.5 0.5	mA
Instantaneous on-state voltage For $I_T = 30\text{A}$ and $T_c = 25^\circ\text{C}$	$V_T$	-	1.9	2.6	V
DC gate trigger current $V_D = 12\text{V (DC)}$ , $R_L = 30\Omega$ , $T_c = 25^\circ\text{C}$	$I_{GT}$	-	6	15	mA
DC gate trigger voltage $V_D = 12\text{V (DC)}$ , $R_L = 30\Omega$ , $T_c = 25^\circ\text{C}$	$V_{GT}$	-	0.65	1.5	V
Instantaneous holding current Gate open and $T_c = 25^\circ\text{C}$	$i_{HO}$	-	9	20	mA

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

Characteristic	Symbol	Limits			Units
		Min	Typ	Max	
<b>Critical rate of rise of off-state voltage</b> $V_D = V_{DROM}$ , exponential rise, $T_C = 100^\circ\text{C}$	dv/dt	20	200	-	V/ $\mu\text{s}$
<b>Gate controlled turn-on time</b> $V_D = V_{DROM}$ , $I_T = 4.5\text{A}$ , $I_{GT} = 200\text{mA}$ , 0.1 $\mu\text{s}$ rise time, $T_C = 25^\circ\text{C}$	$t_{gt}$	-	1	2	$\mu\text{s}$
<b>Circuit commutated turn-off time</b> $V_D = V_{DROM}$ , $I_T = 2\text{A}$ , pulse duration = 50 $\mu\text{s}$ , dv/dt = -30A/ $\mu\text{s}$ , $I_{GT} = 200\text{mA}$ at turn-on, $T_C = 75^\circ\text{C}$	$t_q$	-	15	50	$\mu\text{s}$
<b>Thermal resistance</b> Junction to case Junction to ambient Junction to heat spreader	$R_{\theta JC}$ $R_{\theta JA}$ $R_{\theta JHS}$	- - -	- - -	5 120 -	$^\circ\text{C/W}$

**MECHANICAL CHARACTERISTICS**

<b>Case:</b>	TO-205 Low Profile
<b>Marking:</b>	Alpha-numeric
<b>Polarity:</b>	See below



Dim	TO-205 Low Profile			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.375	8.89	9.39
B	0.305	0.335	7.73	8.50
C	-	0.180	-	4.57
D	0.016	0.023	0.41	0.58
E	-	0.050	-	1.27
F	0.016	0.021	0.41	0.53
G	0.200 TP		5.060 TP	
H	0.026	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14
K	0.500	0.560	12.70	14.22
L	0.250	-	6.35	-
P	-	0.050	-	1.27
M	45 $^\circ\text{C}$ TP		45 $^\circ\text{C}$ TP	
R	0.050	-	1.27	-