

### 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	Value	Unit
<b>Peak repetitive forward and reverse blocking voltage<sup>(1)</sup></b> MCR3835-1 MCR3835-2 MCR3835-3 MCR3835-4 MCR3835-5 MCR3835-6 MCR3835-7 MCR3835-8 MCR3835-9 MCR3835-10	$V_{RRM}, V_{DRM}$	25 50 100 200 300 400 500 600 700 800	Volts
<b>Peak non-repetitive blocking voltage<sup>(1)</sup></b> MCR3835-1 MCR3835-2 MCR3835-3 MCR3835-4 MCR3835-5 MCR3835-6 MCR3835-7 MCR3835-8 MCR3835-9 MCR3835-10	$V_{RRM}, V_{DRM}$	25 50 100 200 300 400 500 600 700 800	Volts
<b>Forward on-state current RMS</b> (all conduction angles)	$I_{T(RMS)}$	35	Amps
<b>Peak surge current</b> (one cycle, 60Hz, $T_J = -40$ to $+125^\circ\text{C}$ )	$I_{TSM}$	35	Amps
<b>Circuit fusing considerations</b> ( $T_J = -40$ to $+100^\circ\text{C}$ , $t \leq 8.3\text{ms}$ )	$I^2t$	510	$\text{A}^2\text{s}$
<b>Peak gate power</b>	$P_{GM}$	5	Watts
<b>Average gate power</b>	$P_{G(AV)}$	0.5	Watts
<b>Peak forward gate current</b>	$I_{GM}$	2	Amps
<b>Peak gate voltage, forward or reverse</b>	$V_{GM}$	10	Volts
<b>Operating junction temperature range</b>	$T_J$	-40 to +125	$^\circ\text{C}$
<b>Storage temperature range</b>	$T_{stg}$	-40 to +150	$^\circ\text{C}$
<b>Mounting torque</b>		30	In. lb.

Note 1:  $V_{DRM}$  and  $V_{RRM}$  for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

### THERMAL CHARACTERISTICS

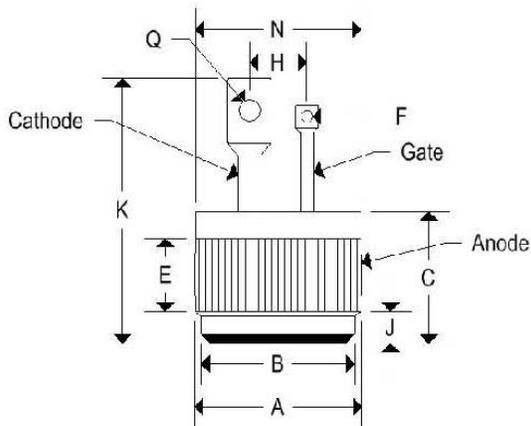
Characteristic	Symbol	Maximum	Unit
<b>Thermal resistance, junction to case</b>	$R_{\theta JC}$	1.2	$^\circ\text{C}/\text{W}$

### ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>Peak forward or reverse blocking current</b> (Rated V <sub>DRM</sub> or V <sub>RRM</sub> , gate open) T <sub>J</sub> = 25°C T <sub>J</sub> = 100°C	I <sub>DRM</sub> , I <sub>RRM</sub>	- -	- 1	10 5	μA mA
<b>Forward "on" voltage</b> (I <sub>TM</sub> = 35A peak)	V <sub>TM</sub>	-	1.2	1.5	Volts
<b>Gate trigger current (continuous dc)</b> (V <sub>D</sub> = 7V, R <sub>L</sub> = 100Ω)	I <sub>GT</sub>	-	10	40	mA
<b>Gate trigger voltage (continuous dc)</b> (V <sub>D</sub> = 7V, R <sub>L</sub> = 100Ω) (V <sub>D</sub> = rated V <sub>DRM</sub> , R <sub>L</sub> = 100Ω, T <sub>J</sub> = 100°C)	V <sub>GT</sub> V <sub>GD</sub>	- 0.2	0.7 -	1.5 -	Volts
<b>Holding current</b> (V <sub>D</sub> = 7Vdc, gate open)	I <sub>H</sub>	-	10	50	mA
<b>Turn-on time (t<sub>d</sub> + t<sub>r</sub>)</b> (I <sub>TM</sub> = 35A, I <sub>GT</sub> = 40mAdc)	T <sub>on</sub>	-	1	-	μs
<b>Turn-off time</b> (I <sub>TM</sub> = 10A, I <sub>R</sub> = 10A) (I <sub>TM</sub> = 10A, I <sub>R</sub> = 10A, T <sub>J</sub> = 100°C)	t <sub>q</sub>	- -	20 30	- -	μs
<b>Forward voltage application rate</b> (V <sub>D</sub> = rated V <sub>DRM</sub> , T <sub>J</sub> = 100°C)	dv/dt	-	50	-	V/μs

### MECHANICAL CHARACTERISTICS

<b>Case:</b>	Digi PF2
<b>Marking:</b>	Alpha-numeric



	DIGI PF2			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.501	0.505	12.730	12.830
B	0.465	0.475	11.810	12.060
C	0.330	0.380	8.390	9.650
E	0.100	-	2.540	-
F	0.035	0.085	0.890	2.160
J	0.080	0.097	2.040	2.460
K	-	0.800	-	20.320
N	-	0.510	-	12.950
Q	0.065	0.160	1.650	4.060

FIGURE 1 – CURRENT DERATING

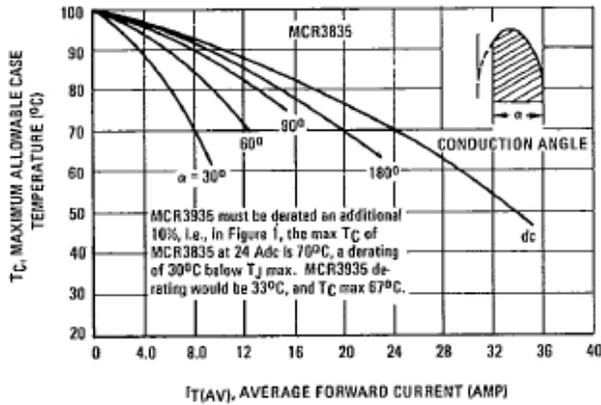


FIGURE 2 – TYPICAL POWER DISSIPATION

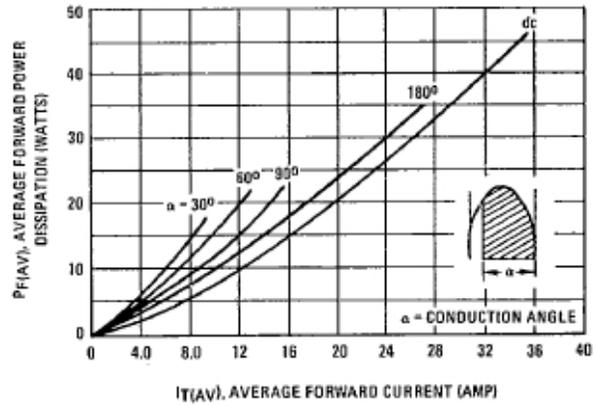


FIGURE 3 – TYPICAL GATE TRIGGER CURRENT

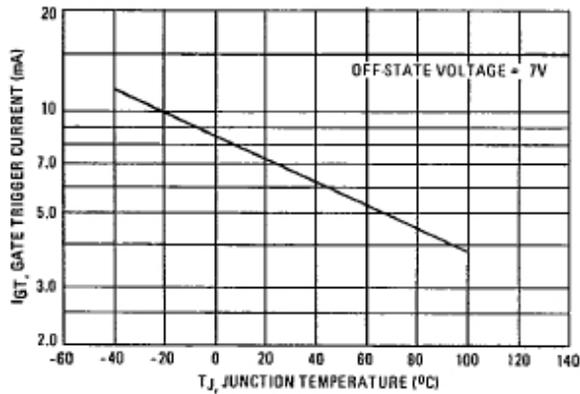


FIGURE 4 – TYPICAL GATE TRIGGER VOLTAGE

