

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
Peak repetitive forward and reverse blocking voltage⁽¹⁾ MCR3935-1 MCR3935-2 MCR3935-3 MCR3935-4 MCR3935-5 MCR3935-6 MCR3935-7 MCR3935-8 MCR3935-9 MCR3935-10	V_{RRM}, V_{DRM}	25 50 100 200 300 400 500 600 700 800	Volts
Peak non-repetitive reverse blocking voltage (t ≤ 5ms) MCR3935-1 MCR3935-2 MCR3935-3 MCR3935-4 MCR3935-5 MCR3935-6 MCR3935-7 MCR3935-8 MCR3935-9 MCR3935-10	V_{RSM}	25 50 100 200 300 400 500 600 700 800	Volts
Forward on-state current RMS (all conduction angles)	$I_{T(RMS)}$	35	Amps
Peak surge current (one cycle, 60Hz, T _J = -40 to +125°C)	I_{TSM}	35	Amps
Circuit fusing considerations (T _J = -40 to +100°C, t ≤ 8.3ms)	I^2t	510	A ² s
Peak gate power	P_{GM}	5	Watts
Average gate power	$P_{G(AV)}$	0.5	Watts
Peak forward gate current	I_{GM}	2	Amps
Peak gate voltage, forward or reverse	V_{GM}	10	Volts
Operating junction temperature range	T _J	-40 to +125	°C
Storage temperature range	T _{stg}	-40 to +150	°C
Mounting torque		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
Thermal resistance, junction to case	R _{θJC}	1.2	°C/W

MCR3935 SERIES

SILICON CONTROLLED RECTIFIER

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

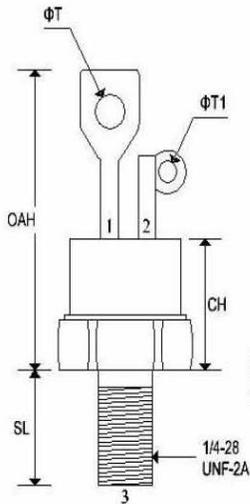
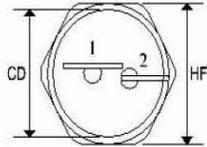
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Peak forward or reverse blocking current (Rated V_{DRM} or V_{RRM} , gate open) $T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	I_{DRM}, I_{RRM}	- -	- 1	10 5	μA mA
Forward "on" voltage ($I_{TM} = 35\text{A}$ peak)	V_{TM}	-	1.2	1.5	Volts
Gate trigger current (continuous dc) ($V_D = 7\text{V}$, $R_L = 100\Omega$)	I_{GT}	-	10	40	mA
Gate trigger voltage (continuous dc) ($V_D = 7\text{V}$, $R_L = 100\Omega$) ($V_D = \text{rated } V_{DRM}$, $R_L = 100\Omega$, $T_J = 100^\circ\text{C}$)	V_{GT} V_{GD}	- 0.2	0.7 -	1.5 -	Volts
Holding current ($V_D = 7\text{Vdc}$, gate open)	I_H	-	10	50	mA
Turn-on time ($t_d + t_r$) ($I_{TM} = 35\text{A}$, $I_{GT} = 40\text{mA dc}$)	T_{on}	-	1	-	μs
Turn-off time ($I_{TM} = 10\text{A}$, $I_R = 10\text{A}$) ($I_{TM} = 10\text{A}$, $I_R = 10\text{A}$, $T_J = 100^\circ\text{C}$)	t_q	- -	20 30	- -	μs
Forward voltage application rate ($V_D = \text{rated } V_{DRM}$, $T_J = 100^\circ\text{C}$)	dv/dt	-	50	-	$\text{V}/\mu\text{s}$

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SILICON CONTROLLED RECTIFIER

MECHANICAL CHARACTERISTICS

Case	TO-48
Marking	Body painted, alpha-numeric
Polarity	Cathode is stud



	TO-48			
	Inches		Millimeters	
	Min	Max	Min	Max
CD	-	0.543	-	13.793
CH	-	0.560	-	13.970
HF	0.544	0.563	13.817	14.301
OAH	-	1.193	-	30.303
SL	0.422	0.453	10.718	11.507
ΦT	0.125	0.165	3.175	4.191
ΦT ₁	0.060	0.075	1.524	1.905

FIGURE 1 – CURRENT DERATING

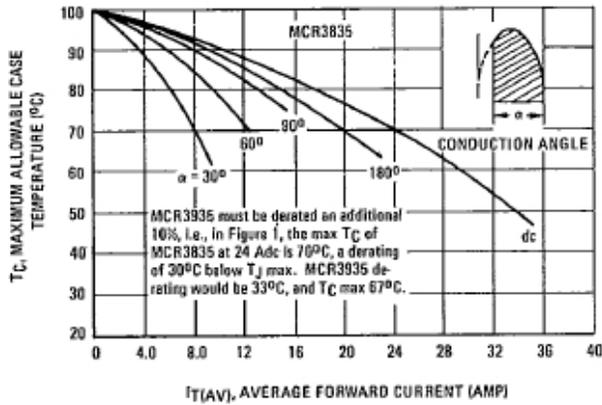


FIGURE 2 – TYPICAL POWER DISSIPATION

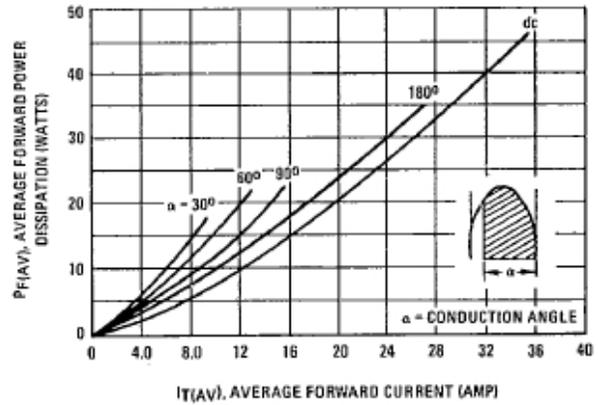


FIGURE 3 – TYPICAL GATE TRIGGER CURRENT

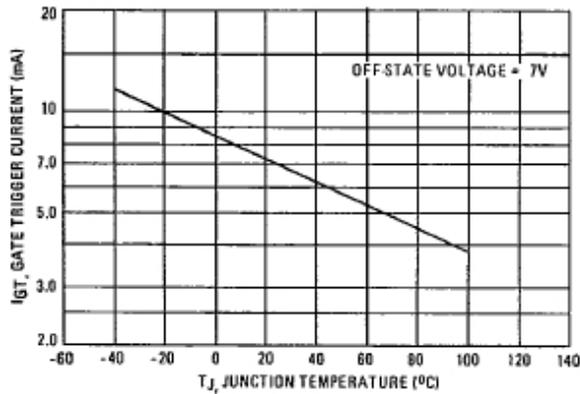


FIGURE 4 – TYPICAL GATE TRIGGER VOLTAGE

