

### 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> ( $T_j = 25$ to $+125^\circ\text{C}$ , gate open)	$V_{RRM}, V_{DRM}$	MCR63-1	25
MCR63-2		50	
MCR63-3		100	
MCR63-4		200	
MCR63-5		300	
MCR63-6		400	
MCR63-7		500	
MCR63-8		600	
MCR63-9		700	
MCR63-10		800	
<b>Non-repetitive peak reverse blocking voltage</b> ( $t \leq 5\text{ms}$ ) <sup>(1)</sup>	$V_{RSM}$	MCR63-1	35
MCR63-2		75	
MCR63-3		150	
MCR63-4		300	
MCR63-5		400	
MCR63-6		500	
MCR63-7		600	
MCR63-8		700	
MCR63-9		800	
MCR63-10		900	
<b>Forward current RMS</b>	$I_{T(RMS)}$	55	Amps
<b>Peak surge current</b> (one cycle, 60Hz, $T_c = -40$ to $+125^\circ\text{C}$ )	$I_{TSM}$	550	Amps
<b>Circuit fusing considerations</b> ( $t = 8.3\text{ms}$ )	$I^2t$	1255	$\text{A}^2\text{s}$
<b>Peak gate power</b>	$P_{GM}$	20	Watts
<b>Average gate power</b> (Pulse width $\leq 2\mu\text{s}$ )	$P_{G(AV)}$	0.5	Watts
<b>Peak forward gate current</b>	$I_{GM}$	2	Amps
<b>Forward peak gate voltage</b> <b>Reverse peak gate voltage</b>	$V_{GFM}$ $V_{GRM}$	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 without incurring damage. Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode.

# MCR63 SERIES

## SILICON CONTROLLED RECTIFIERS

### THERMAL CHARACTERISTICS

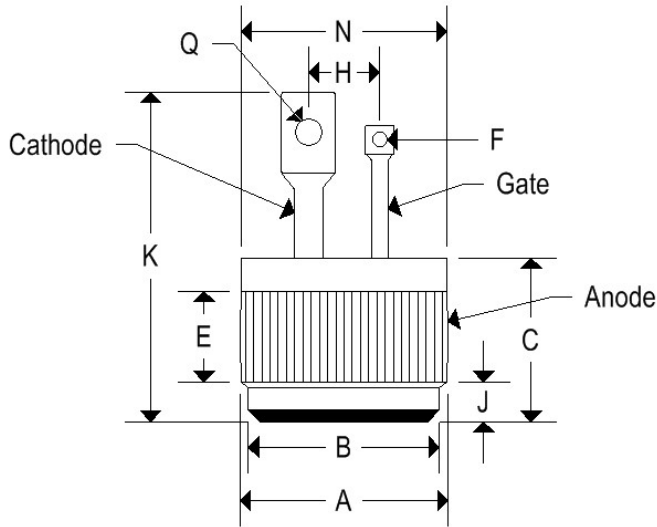
Characteristic	Symbol	Maximum	Unit
Thermal resistance, junction to case Pressfit	$R_{\theta JC}$	1	$^{\circ}\text{C}/\text{W}$

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

Characteristic	Symbol	Min.	Max.	Unit
<b>Peak forward or reverse blocking current</b> ( $V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}, \text{ gate open}$ ) $T_C = 25^{\circ}\text{C}$ $T_C = 125^{\circ}\text{C}$	$I_{DRM}, I_{RRM}$	- -	10 2	$\mu\text{A}$ mA
<b>Forward "on" voltage</b> ( $I_{TM} = 175\text{A peak}$ )	$V_{TM}$	-	2	Volts
<b>Gate trigger current</b> (continuous dc) ( $V_D = 12\text{V}, R_L = 50\Omega$ ) $T_C = 25^{\circ}\text{C}$ $T_C = -40^{\circ}\text{C}$	$I_{GT}$	- -	40 75	mA
<b>Gate trigger voltage</b> (continuous dc) ( $V_D = 12\text{V}, R_L = 50\Omega$ ) $T_C = 25^{\circ}\text{C}$ $T_C = -40^{\circ}\text{C}$ ( $V_D = \text{Rated } V_{DRM}, R_L = 1000\Omega, T_J = 125^{\circ}\text{C}$ )	$V_{GT}$	- - 0.2	3 3.5 -	Volts
<b>Holding current</b> ( $V_D = 12\text{V}, R_L = 50\Omega, \text{ gate open}$ )	$I_H$	-	60	mA
<b>Forward voltage application rate</b> ( $V_D = \text{rated } V_{DRM}, T_J = 125^{\circ}\text{C}$ )	dv/dt	50	-	V/ $\mu\text{s}$

### MECHANICAL CHARACTERISTICS

Case:	Digi PF1
Marking:	Body painted, alpha-numeric



	DIGI PF1			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.501	0.505	12.730	12.830
F	-	0.160	-	4.060
G	0.085	0.095	2.160	2.410
H	0.060	0.070	1.520	1.780
J	0.300	0.350	7.620	8.890
K	-	1.050	-	26.670
L	-	0.670	-	17.020
Q	0.055	0.085	1.400	2.160

FIGURE 1 - AVERAGE CURRENT DERATING

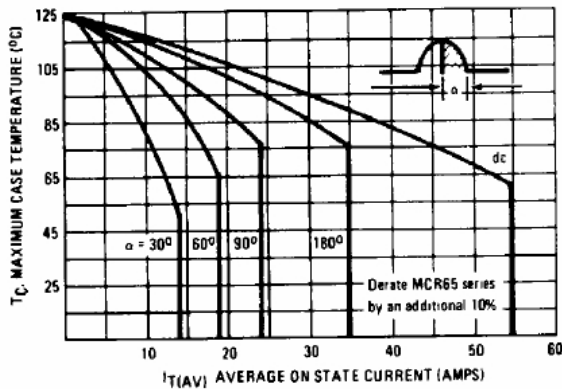


FIGURE 2 - POWER DISSIPATION

