

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 forward and reverse blocking voltage ⁽¹⁾ ($T_j = -40$ to 100°C)			
2N6167	V_{DRM}	100	Volts
2N6168	V_{RRM}	200	
2N6169		400	
2N6170		600	
Peak non-repetitive reverse blocking voltage ($t \leq 5\text{ms}$)			
2N6167	V_{RSM}	150	Volts
2N6168		250	
2N6169		450	
2N6170		650	
Average forward current ($T_c = -40$ to $+65^\circ\text{C}$) (85°C)	$I_{\text{T(AV)}}$	13	Amps
		6.5	
Peak surge current (1 cycle, 60Hz, $T_c = 65^\circ\text{C}$) (1.5ms pulse @ $T_j = 100^\circ\text{C}$) Preceded and followed by no current or voltage	I_{TSM}	240	Amps
		560	
Circuit fusing ($T_j = -40$ to $+100^\circ\text{C}$, $t = 8.3\text{ms}$)	I^2t	235	A^2s
Peak gate power	P_{GM}	5	Watts
Average gate power	$P_{\text{G(AV)}}$	0.5	Watts
Forward peak gate current	I_{GM}	2	Amps
Operating junction temperature range	T_j	-40 to 100	$^\circ\text{C}$
Storage temperature range	T_{stg}	-40 to 150	$^\circ\text{C}$
Stud torque		30	In. lb.
Thermal resistance, junction to case	$R_{\text{th(j-c)}}$	1.5	$^\circ\text{C/W}$

Note 1: 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. Devices should not be tested with a constant source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage.

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

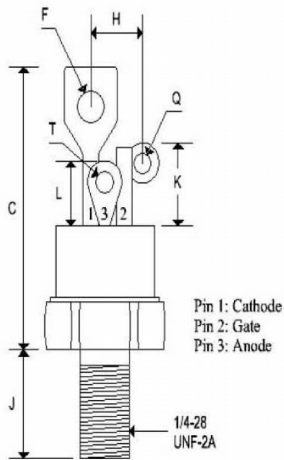
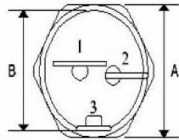
Characteristic	Symbol	Min	Typ	Max	Unit	
OFF CHARACTERISTICS						
Peak repetitive forward or reverse blocking current (Rated V_{DRM} or V_{RRM} , gate open, $T_C = 100^\circ\text{C}$)						
2N6167		-	1	2.0	mA	
2N6168		-	1	2.5	mA	
2N6169	I_{DRM}, I_{RRM}	-	1	3.0	mA	
2N6170		-	1	4.0	mA	
(Rated V_{DRM} or V_{RRM} , gate open, $T_C = 25^\circ\text{C}$)						
All devices		-	-	10	μA	
Peak forward on-state voltage ($I_{TM} = 41\text{A}$ peak)	V_{TM}	-	1.5	1.7	Volts	
Gate trigger current (continuous dc) ($V_D = 12\text{Vdc}$, $R_L = 24\Omega$) $T_C = -40^\circ\text{C}$ $T_C = 25^\circ\text{C}$	I_{GT}	-	-	75	mA	
		-	2.1	40		
Gate trigger voltage (continuous dc) ($V_D = 12\text{Vdc}$, $R_L = 24\Omega$) $T_C = -40^\circ\text{C}$ $T_C = 25^\circ\text{C}$	V_{GT}	-	0.8	2.5	Volts	
		-	0.63	1.6		
Holding current ($V_D = 12\text{Vdc}$, gate open, $I_T = 200\text{mA}$) $T_C = -40^\circ\text{C}$ $T_C = 25^\circ\text{C}$	I_H	-	-	90	mA	
		-	3.5	50		
Turn-on time ($I_{TM} = 41\text{A}$, $V_D = \text{rated } V_{DRM}$, $I_{GT} = 200\text{mA}$, rise time $\leq 0.05\mu\text{s}$, pulse width = $10\mu\text{s}$)	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_{off}	-	25	-	μs	
		-	40	-		
Forward voltage application rate ($T_J = 100^\circ\text{C}$, $V_D = \text{Rated } V_{DRM}$)	dv/dt	-	50	-	$\text{V}/\mu\text{s}$	

2N6167-2N6170

SILICON CONTROLLED RECTIFIER

MECHANICAL CHARACTERISTICS

Case	TO-48 ISO
Marking	Alpha-numeric
Pin out	See below



	TO-48 ISO			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.551	0.559	14.000	14.200
B	0.501	0.505	12.730	12.830
C	-	1.280	-	32.510
F	-	0.160	-	4.060
H	-	0.265	-	6.730
J	0.420	0.455	10.670	11.560
K	0.300	0.350	7.620	8.890
L	0.255	0.275	6.480	6.990
Q	0.055	0.085	1.400	2.160
T	0.135	0.150	3.430	3.810