

### 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 off state voltage<sup>(1)</sup></b> (T <sub>j</sub> = -40 to +100°C) C230F, C231F, C230F3, C231F3, C232F, C233F C230A, C231A, C230A3, C231A3, C232A, C233A C230B, C231B, C230B3, C231B3, C232B, C233B C230C, C231C, C230C3, C231C3, C232C, C233C C230D, C231D, C230D3, C231D3, C232D, C233D C230E, C231E, C230E3, C231E3, C232E, C233E C230M, C231M, C230M3, C231M3, C232M, C233M	V <sub>RRM</sub> , V <sub>DRM</sub>	50 100 200 300 400 500 600	Volts
<b>Peak non-repetitive reverse voltage</b> (T <sub>j</sub> = -40 to +100°C) C230F, C231F, C230F3, C231F3, C232F, C233F C230A, C231A, C230A3, C231A3, C232A, C233A C230B, C231B, C230B3, C231B3, C232B, C233B C230C, C231C, C230C3, C231C3, C232C, C233C C230D, C231D, C230D3, C231D3, C232D, C233D C230E, C231E, C230E3, C231E3, C232E, C233E C230M, C231M, C230M3, C231M3, C232M, C233M	V <sub>RSM</sub>	75 150 300 400 500 600 720	Volts
<b>Forward current RMS</b>	I <sub>T(RMS)</sub>	25	Amps
<b>Peak surge current</b> (one cycle, 60Hz, T <sub>c</sub> = -40 to +100°C)	I <sub>TSM</sub>	250	Amps
<b>Circuit fusing considerations</b> (T <sub>c</sub> = -40 to +100°C, t = 8.3ms)	I <sup>2</sup> t	260	A <sup>2</sup> s
<b>Peak gate power</b>	P <sub>GM</sub>	5	Watts
<b>Average gate power</b>	P <sub>G(AV)</sub>	0.5	Watts
<b>Peak forward gate current</b>	I <sub>GM</sub>	2	Amps
<b>Operating junction temperature range</b>	T <sub>j</sub>	-40 to +100	°C
<b>Storage temperature range</b>	T <sub>stg</sub>	-40 to +125	°C
<b>Mounting torque</b>		30	In. lb.

### THERMAL CHARACTERISTICS

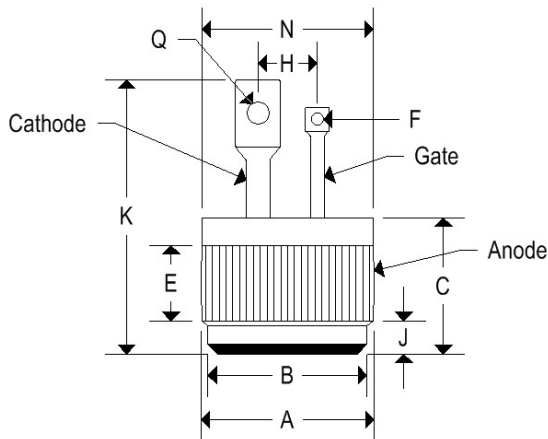
Characteristic	Symbol	Maximum	Unit
<b>Thermal resistance, junction to case</b> Pressfit Isolated stud	R <sub>θJC</sub>	1 1.15	°C/W

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>Peak forward or reverse blocking current</b> (Rated $V_{DRM}$ or $V_{RRM}$ , gate open) $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	$I_{DRM}, I_{RRM}$	- -	- -	10 1	$\mu\text{A}$ mA
<b>Forward "on" voltage</b> ( $I_{TM} = 100\text{A}$ peak, pulse width $\leq 1\text{ms}$ , duty cycle $\leq 2\%$ )	$V_{TM}$	-	-	1.9	Volts
<b>Gate trigger current</b> (C230, C230()3, C232 series) ( $V_D = 12\text{V}$ , $R_L = 120\Omega$ ) ( $V_D = 12\text{V}$ , $R_L = 60\Omega$ , $T_C = -40^\circ\text{C}$ )	$I_{GT}$	- -	- -	25 40	mA
<b>Gate trigger current</b> (C231, C231()3, C233 series) ( $V_D = 12\text{V}$ , $R_L = 120\Omega$ ) ( $V_D = 12\text{V}$ , $R_L = 60\Omega$ , $T_C = -40^\circ\text{C}$ )	$I_{GT}$	- -	- -	9 20	mA
<b>Gate trigger voltage</b> (continuous dc) ( $V_D = 12\text{V}$ , $R_L = 120\Omega$ ) ( $V_D = 12\text{V}$ , $R_L = 60\Omega$ , $T_C = -40^\circ\text{C}$ ) ( $V_D = \text{Rated } V_{DRM}$ , $R_L = 1000\Omega$ , $T_C = 100^\circ\text{C}$ )	$V_{GT}$	- - 0.2	- - -	1.5 2 -	Volts
<b>Holding current</b> ( $V_D = 24\text{V}$ , gate open, $I_T = 0.5\text{A}$ ) $T_C = 25^\circ\text{C}$ $T_C = -40^\circ\text{C}$	$I_H$	- -	- -	50 100	mA
<b>Turn-on time</b> ( $t_d + t_r$ ) ( $I_{TM} = 25\text{A}$ , $I_{GT} = 40\text{mA}$ , $V_D = \text{Rated } V_{DRM}$ )	$t_{gt}$	-	1	-	$\mu\text{s}$
<b>Turn-off time</b> ( $I_{TM} = 10\text{A}$ , $I_R = 10\text{A}$ , pulse width = $50\mu\text{s}$ , $dv/dt = 20\text{V}/\mu\text{s}$ , $V_D = \text{Rated } V_{DRM}$ ) ( $T_C = 100^\circ\text{C}$ )	$t_q$	- -	25 35	- -	$\mu\text{s}$
<b>Forward voltage application rate</b> ( $V_D = \text{rated } V_{DRM}$ , $T_C = 100^\circ\text{C}$ )	$dv/dt$	-	100	-	$\text{V}/\mu\text{s}$

### MECHANICAL CHARACTERISTICS

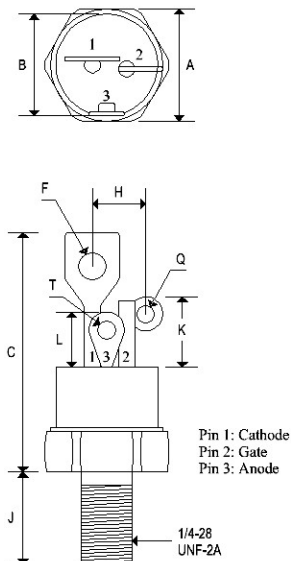
<b>Case</b>	Digi PF2 (C232 and C233 SERIES)
<b>Marking</b>	Body painted, alpha-numeric



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

### MECHANICAL CHARACTERISTICS

<b>Case</b>	TO-48 ISO (C230,C231,C230()3, C231()3 SERIES)
<b>Marking</b>	Body painted, alpha-numeric
<b>Polarity</b>	Cathode is stud



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

