

C230, C231, C230()3, C231()3, C232, C233 SERIES

SILICON CONTROLLED RECTIFIERS

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak repetitive off state voltage⁽¹⁾ (T _J = -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 _{RRM} , V _{DRM}	50 100 200 300 400 500 600	Volts
Peak non-repetitive reverse voltage (T _J = -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 _{RSM}	75 150 300 400 500 600 720	Volts
Forward current RMS	I _{T(RMS)}	25	Amps
Peak surge current (one cycle, 60Hz, T _C = -40 to +100°C)	I _{TSM}	250	Amps
Circuit fusing considerations (T _C = -40 to +100°C, t = 8.3ms)	I ² t	260	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
Operating junction temperature range	T _J	-40 to +100	°C
Storage temperature range	T _{stg}	-40 to +125	°C
Mounting torque		30	In. lb.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Maximum	Unit
Thermal resistance, junction to case Pressfit Isolated stud	R _{θJC}	1 1.15	°C/W

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

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

(All dimensions in mm)

