

MAIN FEATURES

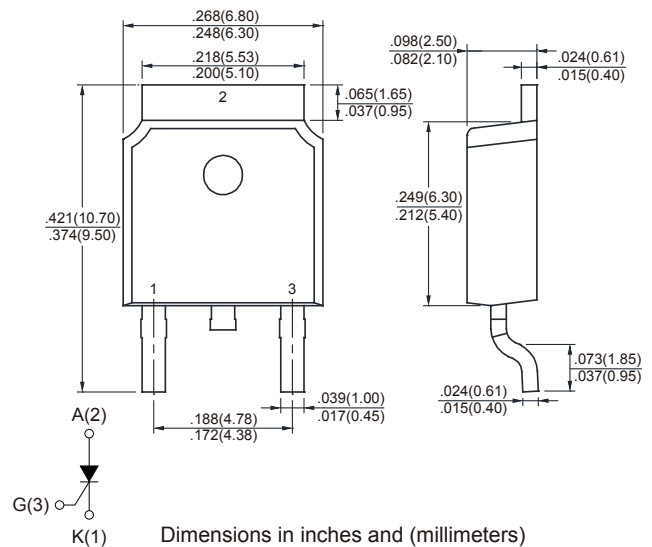
Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	500	V
I_{GT}	15	mA

DESCRIPTION

The CR1215-500DP of silicon controlled rectifiers are specifically designed for medium power switching and phase control applications.

The glass passivation technology used has reliable operation up to 125°C junction temperature.

TO-252



ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	TEST CONDITIONS	VALUE	UNIT
V_{DRM}	Repetitive peak off-state voltage	$T_J = 25^\circ\text{C}$	500	V
V_{RRM}	Repetitive peak reverse voltage	$T_J = 25^\circ\text{C}$	500	V
$I_{T(RMS)}$	RMS on-state current full sine wave	$T_C = 98^\circ\text{C}$, 180° conduction angle	12	A
I_{TSM}	Non repetitive surge peak on-state current	F=50Hz, $t_p=10\text{ms}$, half full cycle, $T_J \text{ initial}=25^\circ\text{C}$	100	A
I^2t	I^2t Value for fusing	$t_p = 10 \text{ ms}$	50	A^2s
I_{GM}	Peak gate current		2	A
$P_{G(AV)}$	Average gate power dissipation		0.5	W
P_{GM}	Peak gate power		5	W
dI/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$	50	$\text{A}/\mu\text{s}$
T_J	Operating junction temperature range		-40 to 125	$^\circ\text{C}$
T_{STG}	Storage temperature range		-40 to 150	$^\circ\text{C}$

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

SYMBOL	TEST CONDITIONS			VALUE	UNIT
I_{GT}	$V_D = 12\text{V}$, $R_L = 100\Omega$		MAX	15	mA
V_{GT}	$V_D = 12\text{V}$, $R_L = 100\Omega$		MAX	1.5	V
I_H	$V_{AK} = 12\text{V}$, $I_{GK} = 100\text{mA}$		MAX	20	mA
I_L	$I_G = 1.2 \times I_{GT}$		MAX	40	mA
dV/dt	$V_D = 67\% V_{DRM}$, Gate open	$T_J = 125\text{ }^{\circ}\text{C}$	MIN	50	V/ μs

STATIC CHARACTERISTICS

SYMBOL	TEST CONDITIONS			VALUE	UNIT
V_{TM}	$I_T = 23\text{A}$, $t_p = 380\mu\text{s}$	$T_J = 25\text{ }^{\circ}\text{C}$	MAX	1.75	V
I_{DRM}, I_{RRM}	$V_D = V_{DRM}$, $V_R = V_{RRM}$	$T_J = 25\text{ }^{\circ}\text{C}$	MAX	10	μA
		$T_J = 125\text{ }^{\circ}\text{C}$	MAX	0.5	mA

THERMAL RESISTANCE

SYMBOL	PARAMETER	VALUE	UNIT
$R_{\theta JC}$	Thermal resistance, junction to case	2.4	$^{\circ}\text{C/W}$

RATINGS AND CHARACTERISTICS CURVES CR1215-500DP

Fig.1 - RMS on-state current versus case temperature

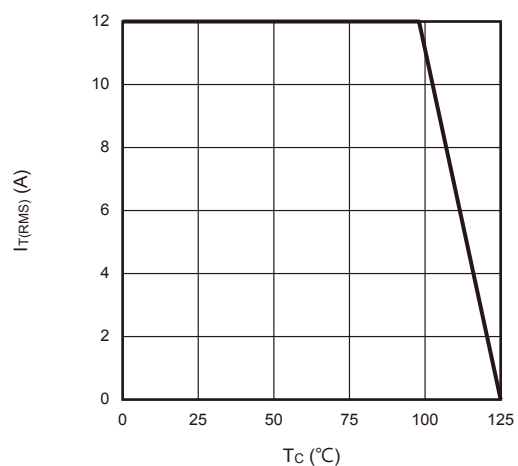


Fig.2 - Surge peak on-state current versus number of cycles

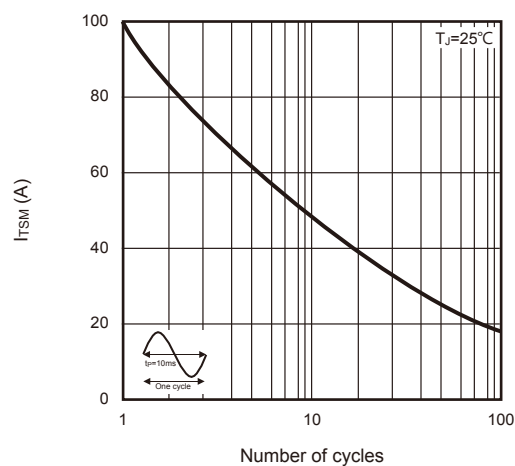


Fig.3 - On-state characteristics (maximum values)

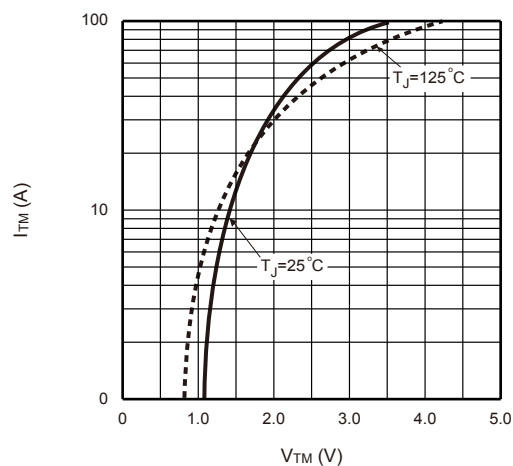


Fig.4 - Maximum power dissipation versus average on-state current

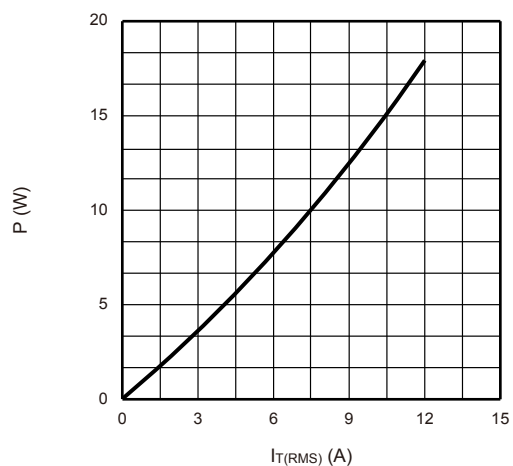


Fig.5 - Relative variations of gate trigger current, holding current and latching current versus junction temperature

