

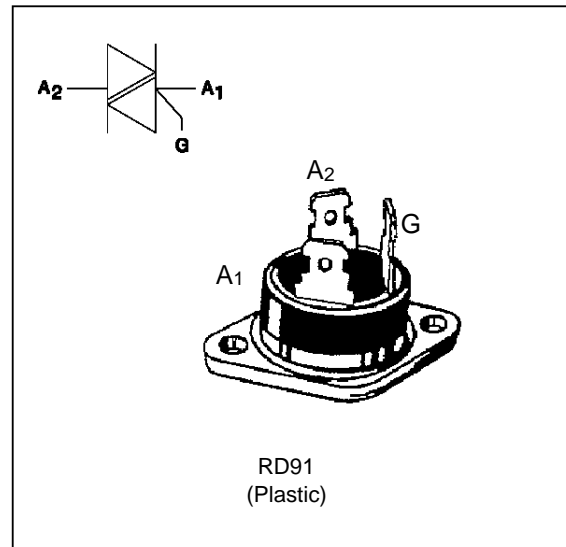
ALTERNISTORS

FEATURES

- HIGH COMMUTATION : > 88 A/ms (400Hz)
- INSULATING VOLTAGE = 2500V(RMS)
(UL RECOGNIZED : EB1734)
- HIGH VOLTAGE CAPABILITY : $V_{DRM} = 1200\text{ V}$

DESCRIPTION

The TODV 625 ---> 1225 use high performance passivated glass alternistor technology. Featuring very high commutation levels and high surge current capability, this family is well adapted to power control on inductive load (motor, transformer...)



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
$I_T(\text{RMS})$	RMS on-state current (360° conduction angle)	$T_c = 80\text{ °C}$ 25	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t_p = 2.5\text{ ms}$	390
		$t_p = 8.3\text{ ms}$	250
		$t_p = 10\text{ ms}$	230
i^2t	i^2t value	$t_p = 10\text{ ms}$ 265	A ² s
di/dt	Critical rate of rise of on-state current Gate supply : $I_G = 500\text{ mA}$ $di_G/dt = 1\text{ A}/\mu\text{s}$	Repetitive $F = 50\text{ Hz}$	20
		Non Repetitive	100
T_{stg} T_j	Storage and operating junction temperature range	- 40 to + 150	°C
		- 40 to + 125	°C
T_l	Maximum lead temperature for soldering during 10 s at 4.5 mm from case	260	°C

Symbol	Parameter	TODV				Unit
		625	825	1025	1225	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage $T_j = 125\text{ °C}$	600	800	1000	1200	V

TODV 625 ---> 1225

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth (c-h)	Contact (case-heatsink) with grease	0.1	°C/W
Rth (j-c) DC	Junction to case for DC	1.6	°C/W
Rth (j-c) AC	Junction to case for 360° conduction angle (F= 50 Hz)	1.2	°C/W

GATE CHARACTERISTICS (maximum values)

$P_G (AV) = 1W$ $P_{GM} = 40W$ (tp = 20 μs) $I_{GM} = 8A$ (tp = 20 μs) $V_{GM} = 16V$ (tp = 20 μs).

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions	Quadrant	Value	Unit
I_{GT}	$V_D=12V$ (DC) $R_L=33\Omega$	$T_j=25^\circ C$	I-II-III MAX	150 mA
V_{GT}	$V_D=12V$ (DC) $R_L=33\Omega$	$T_j=25^\circ C$	I-II-III MAX	1.5 V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3k\Omega$	$T_j=125^\circ C$	I-II-III MIN	0.2 V
tgt	$V_D=V_{DRM}$ $I_G = 500mA$ $di_G/dt = 3A/\mu s$	$T_j=25^\circ C$	I-II-III TYP	2.5 μs
I_L	$I_G=1.2 I_{GT}$	$T_j=25^\circ C$	I-III TYP	100 mA
			II	200 mA
I_H *	$I_T= 500mA$ gate open	$T_j=25^\circ C$	TYP	50 mA
V_{TM} *	$I_{TM}= 35A$ tp= 380 μs	$T_j=25^\circ C$	MAX	1.8 V
I_{DRM} I_{RRM}	V_{DRM} Rated V_{RRM} Rated	$T_j=25^\circ C$	MAX	0.02 mA
			$T_j=125^\circ C$	MAX
dV/dt *	Linear slope up to $V_D=67\%V_{DRM}$ gate open	$T_j=125^\circ C$	MIN	500 V/ μs
(di/dt)c *	(dV/dt)c = 200V/ μs	$T_j=125^\circ C$	MIN	20 A/ms
	(dV/dt)c = 10V/ μs			88

* For either polarity of electrode A₂ voltage with reference to electrode A₁.

Fig.1 : Maximum RMS power dissipation versus RMS on-state current (F=50Hz).
(Curves are cut off by (dl/dt)c limitation)

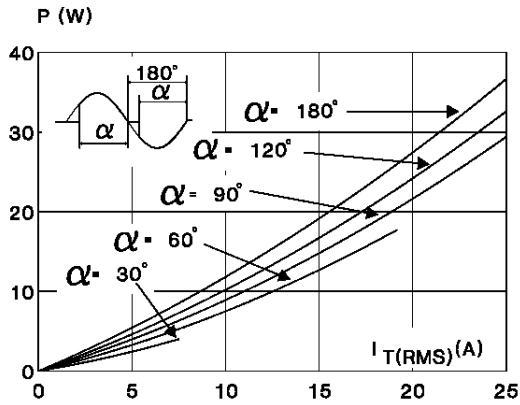


Fig.3 : RMS on-state current versus case temperature.

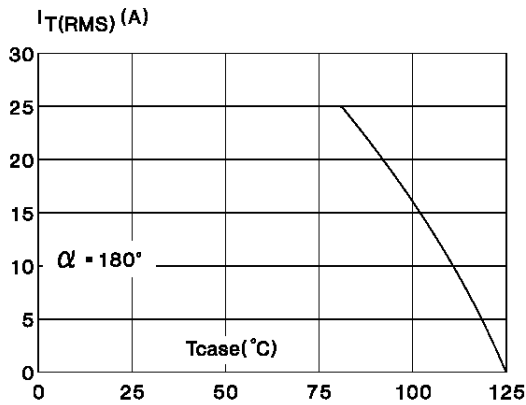


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

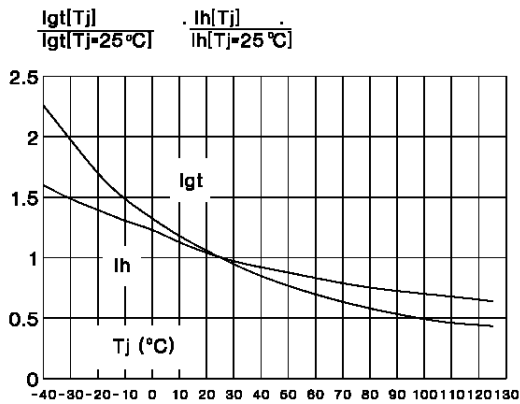


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperatures (Tamb and Tcase) for different thermal resistances heatsink + contact.

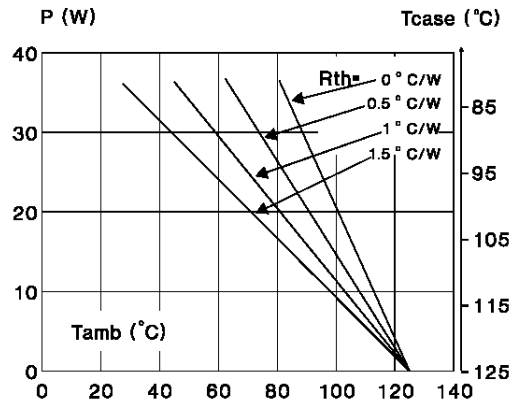


Fig.4 : relative variation of thermal impedance junction to case versus pulse duration.

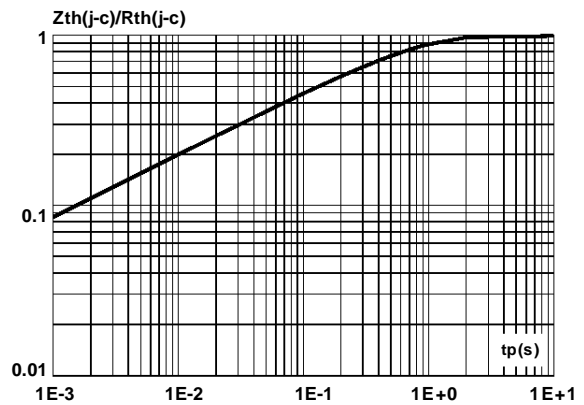


Fig.6 : Non Repetitive surge peak on-state current versus number of cycles.

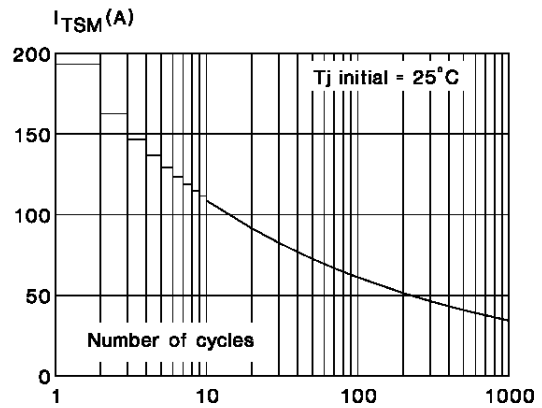


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10\text{ms}$, and corresponding value of I^2t .

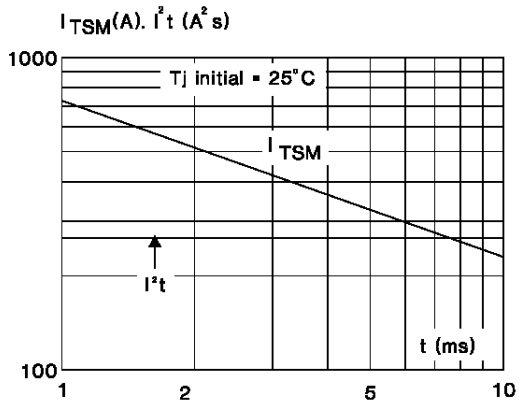


Fig.8 : On-state characteristics (maximum values).

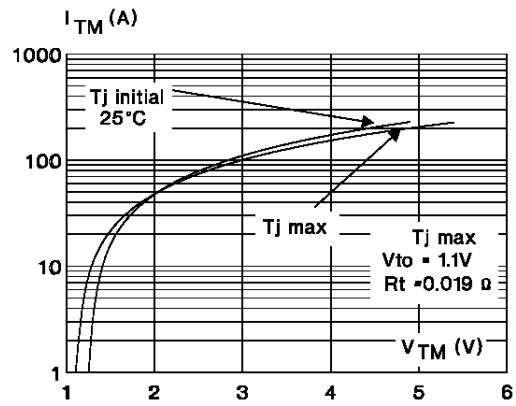
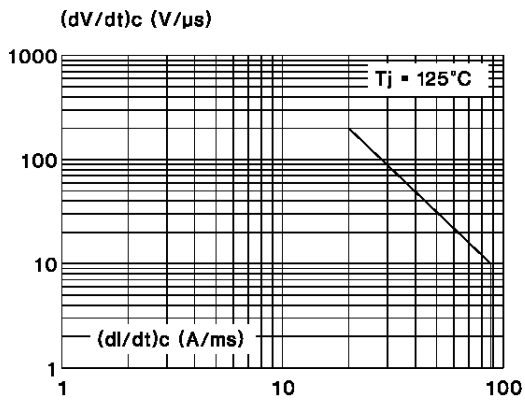
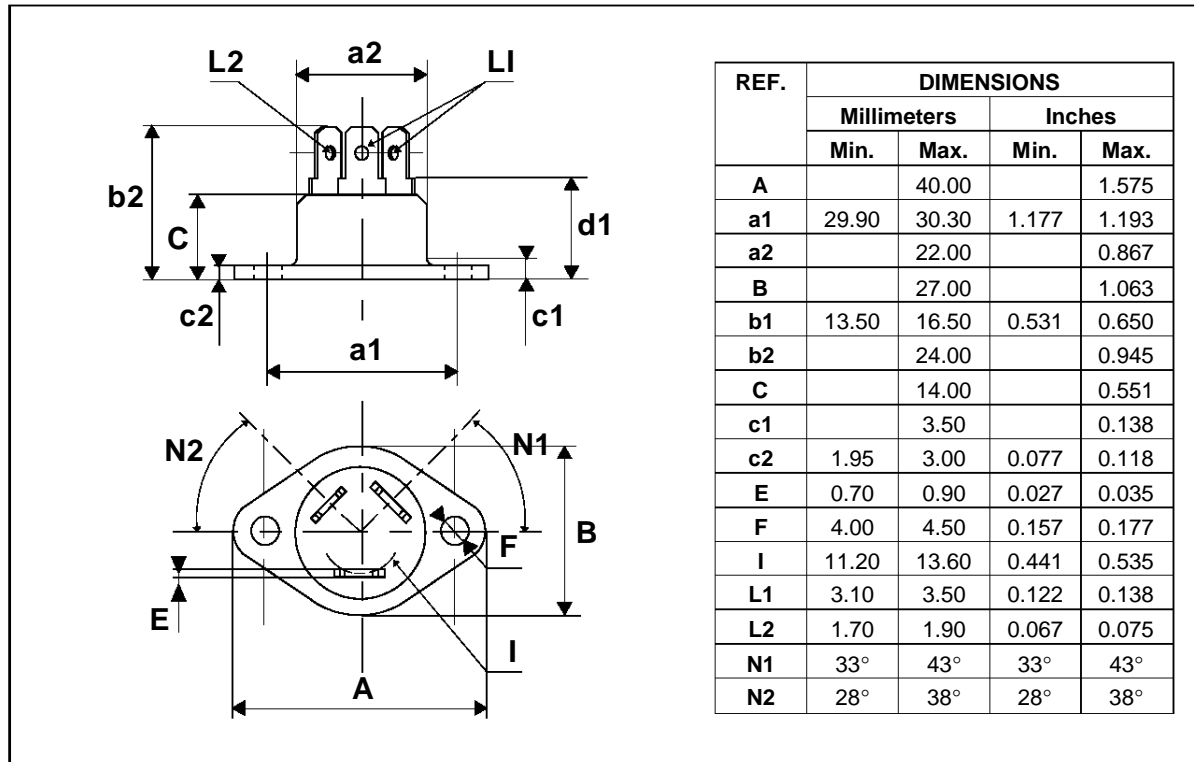


Fig.9 : Safe operating area.



PACKAGE MECHANICAL DATA

RD91 Plastic



Marking : type number
Weight : 20 g

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