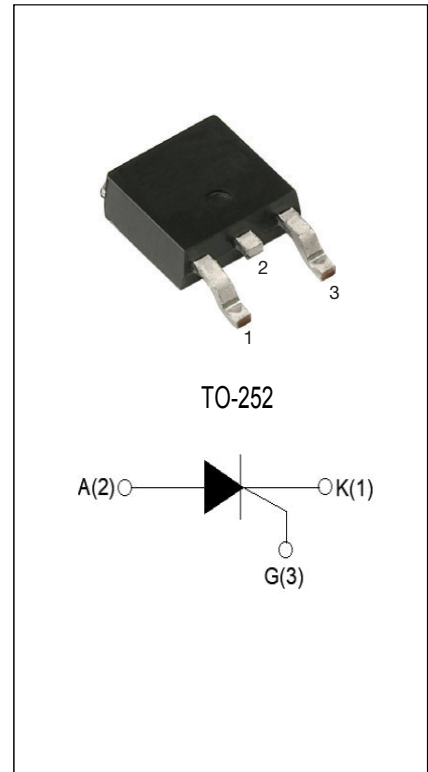


**X0405**
**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT1}$	200	$\mu A$

**DESCRIPTION:**

The JR0405 with the parallel resistor between Gate and Cathode,  $R_{GK}=10\sim 80k\Omega$ , is especially recommended for use on straight hair, igniter, anion generator, etc. Package TO-252 is RoHS compliant.


**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	$^{\circ}C$
Operating junction temperature range	$T_j$	-40-125	$^{\circ}C$
Repetitive peak off-state voltage ( $T_j=25^{\circ}C$ )	$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^{\circ}C$ )	$V_{RRM}$	600	V
RMS on-state current ( $T_c \leq 90^{\circ}C$ )	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, $t_p=20ms$ , $T_j=25^{\circ}C$ )	$I_{TSM}$	40	A
$I^2t$ value for fusing ( $t_p=10ms$ , $T_j=25^{\circ}C$ )	$I^2t$	2	$A^2s$
Critical rate of rise of on-state current ( $T_j=125^{\circ}C$ )	$di/dt$	50	$A/\mu s$
Peak gate current ( $t_p=20\mu s$ , $T_j=110^{\circ}C$ )	$I_{GM}$	4	A
Average gate power dissipation ( $T_j=125^{\circ}C$ )	$P_{G(AV)}$	0.5	W

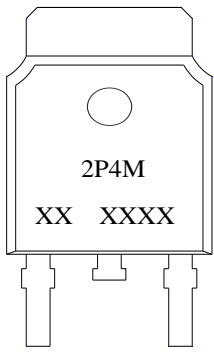
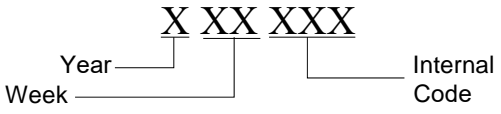
**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Test Condition	Value		Unit
$I_{GT}$	$V_D=12\text{V}$ $R_L=100$	MAX.	200	$\mu\text{A}$
$V_{GT}$		MAX.	1.5	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125$ $R_L=100$	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	MAX.	6	mA
$I_H$	$I_T=500\text{mA}$	MAX.	2	mA
$dV/dt$	$V_D=2/3V_{DRM}$ $T_j=125$	MIN.	200	$\text{V}/\mu\text{s}$

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=1.5\text{A}$	$T_j=25^{\circ}\text{C}$	1.80	V
$V_{TO}$	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.92	V
$R_D$	Dynamic resistance	$T_j=125^{\circ}\text{C}$	36.8	$\text{m}\Omega$
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	1	mA

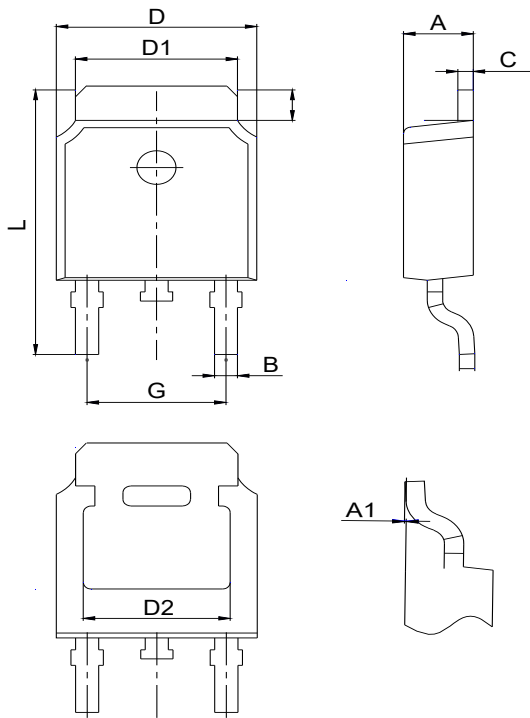
**MARKING**

 <p>2P4M XX XXXX</p>	 <p>X XX XXX Year      Week      Internal Code</p>
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## ORDERING INFORMATION

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	Package	Base qty. (pcs)	Delivery mode
X0405	600	TO-252	2500	REEL

## PACKAGE MECHANICAL DATA

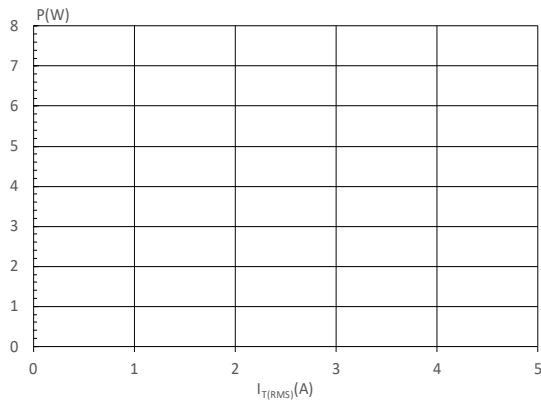


TO-252

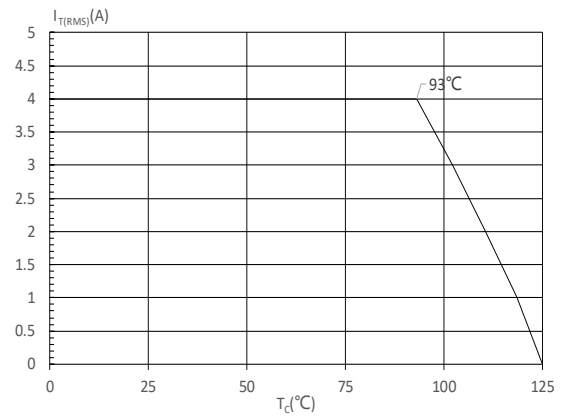
Ref.	Dimensions		
	Milimeters		
	Min.	Typ.	Max.
A	2.10	2.30	2.50
A1	/	/	0.13
B	0.47	0.67	0.87
C	0.30	0.50	0.70
D	6.40	6.60	6.80
D1	5.13	5.33	5.53
D2	4.830REF		
G	4.37	4.57	4.77
L	9.80	10.00	10.20

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-252	REEL	2.5K	5K	54K

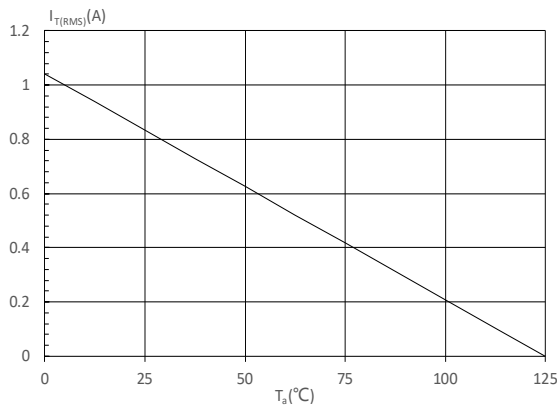
**FIG.1:** Maximum power dissipation versus RMS on-state current



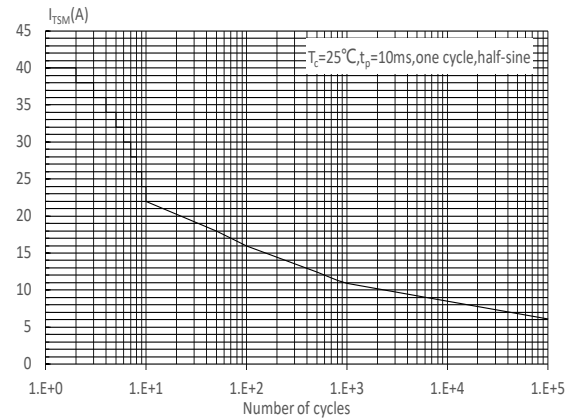
**FIG.2:** RMS on-state current versus case temperature



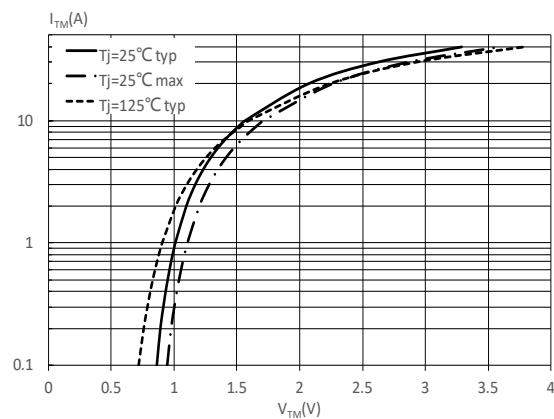
**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35μm)(full cycle)



**FIG.4:** Surge peak on-state current versus number of cycles



**FIG.5:** On-state characteristics



**FIG.6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )

