ELECTRICAL CHARACTERISTICS (Tj = 25°C, unless otherwise specified)

Symbol	Test Conditions			X04xx		Unit
				02	05	
I_{GT}	V_D = 12 V R_L = 140 Ω		MIN.	_	20	µA
			MAX.	200	50	
V_{GT}			MAX.	0.8		V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ R_{GK} = 1 kΩ	Tj = 125°C	MIN.	0.1		V
V_{RG}	I_{RG} = 10 µA		MIN.	8		V
I_H	I_T = 50mA R_{GK} = 1kΩ		MAX.	5		mA
I_L	I_G = 1mA R_{GK} = 1kΩ		MIN.	6		mA
dV/dt	V_D = 67% V_{DRM} R_{GK} = 1kΩ	Tj = 110°C	MIN.	10	15	V/µs
V_{TM}	I_{TM} = 8 A tp = 380 µs	Tj = 25°C	MAX.	1.8		V
V_{t0}	Threshold voltage	Tj = 125°C	MAX.	0.95		V
R_d	Dynamic resistance	Tj = 125°C	MAX.	100		mΩ
I_{DRM}	$V_{DRM} = V_{RRM}$ R_{GK} = 1 kΩ	Tj = 25°C	MAX.	5		µA
I_{RRM}		Tj = 125°C		1		mA

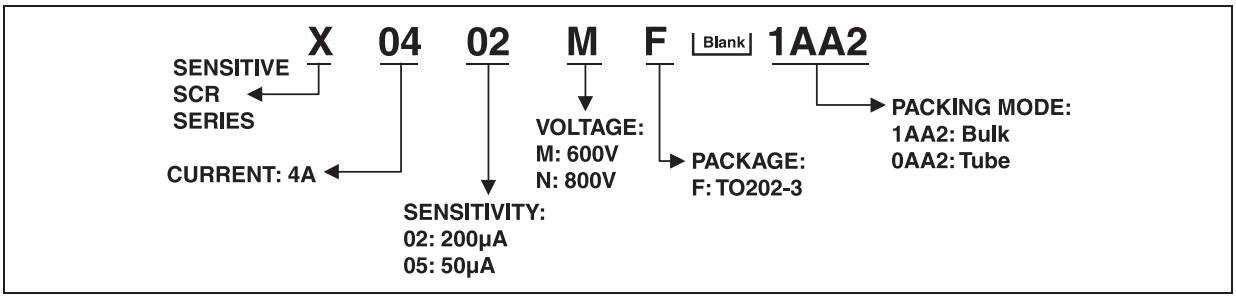
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to leads (DC)	15	°C/W
$R_{th(j-a)}$	Junction to ambient (DC)	100	

PRODUCT SELECTOR

Part Number	Voltage		Sensitivity	Package
	600 V	800 V		
X0402MF	X		200 µA	TO202-3
X0402NF		X	200 µA	TO202-3
X0405MF	X		50 µA	TO202-3
X0405NF		X	50 µA	TO202-3

ORDERING INFORMATION



OTHER INFORMATION

Part Number	Marking	Weight	Base Quantity	Packing mode
X04xxyF 1AA2	X04xxyF	0.8 g	250	Bulk
X04xxyF 0AA2	X04xxyF	0.8 g	50	Tube

Note: xx = sensitivity, y = voltage

Fig. 1: Maximum average power dissipation versus average on-state current.

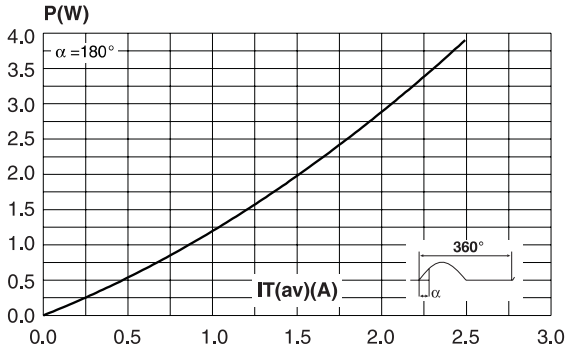


Fig. 2-1: Average and D.C. on-state current versus lead temperature.

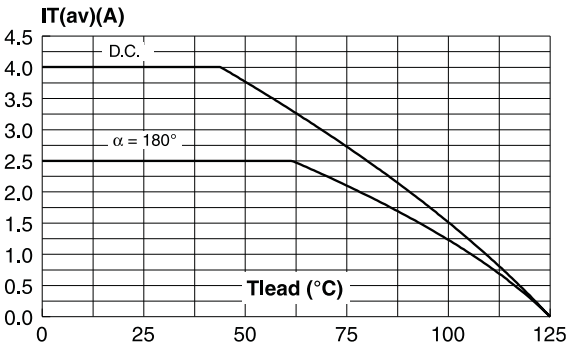


Fig. 2-2: Average and D.C. on-state current versus ambient temperature (device mounted on FR4 with recommended pad layout).

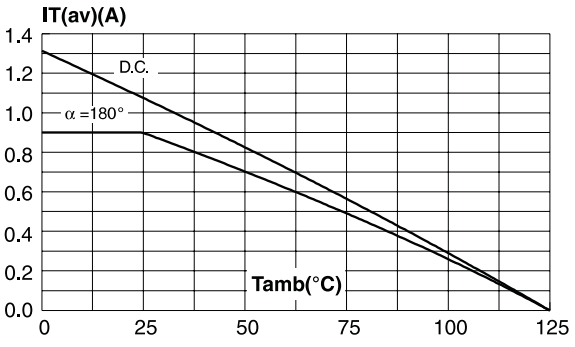


Fig. 3: Relative variation of thermal impedance junction to ambient versus pulse duration.

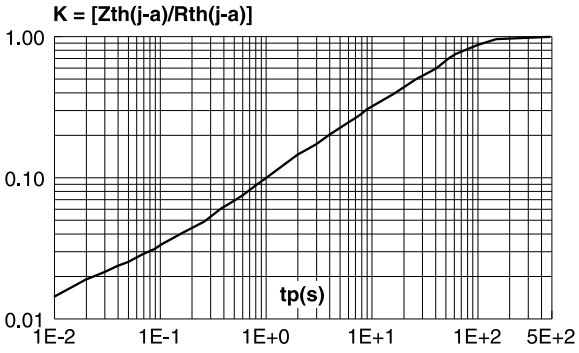


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

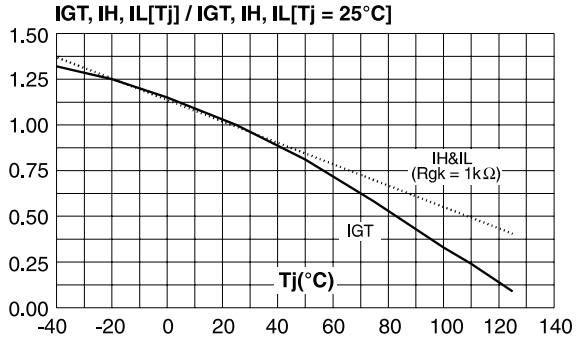


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

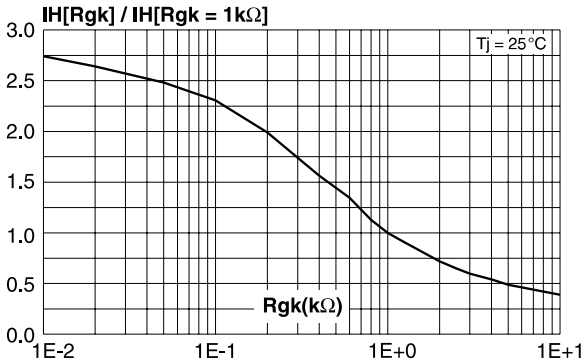


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).

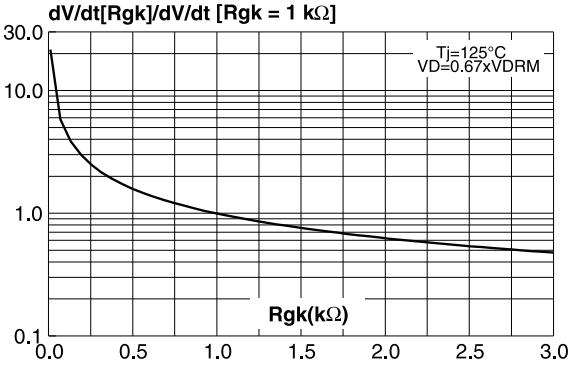


Fig. 7: Relative variation of dV/dt immunity versus gate-cathode capacitance (typical values).

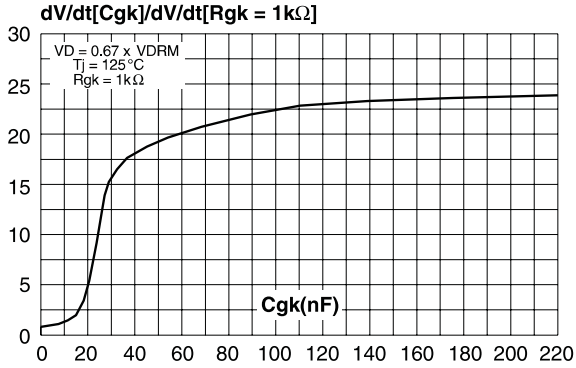


Fig. 8: Surge peak on-state current versus number of cycles.

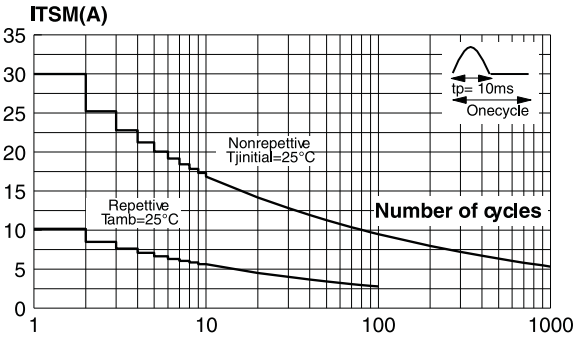


Fig. 9: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms, and corresponding value of I²t.

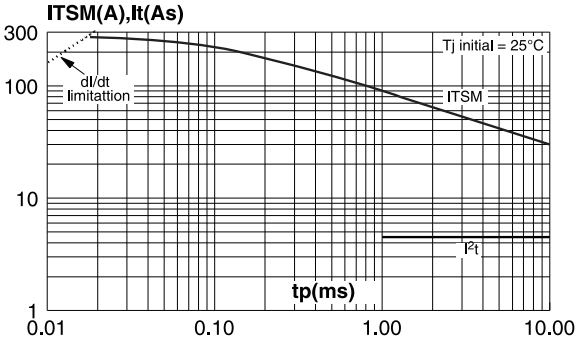
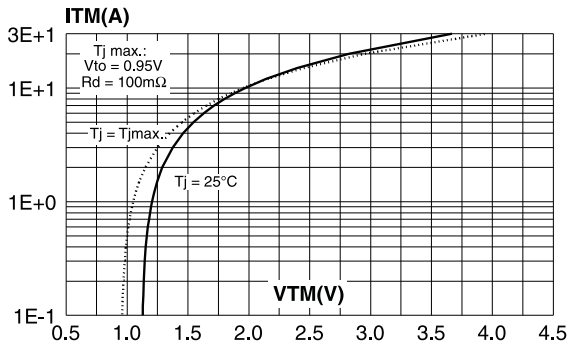
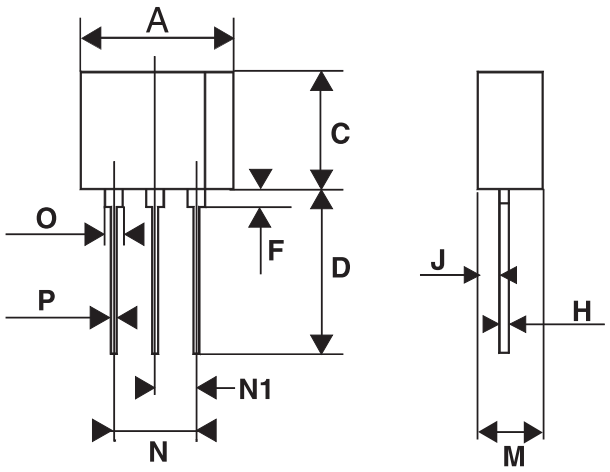


Fig. 10: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA

TO202-3 (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			10.1			0.398
C		7.3			0.287	
D		10.5			0.413	
F			1.5			0.059
H		0.51			0.020	
J		1.5			0.059	
M		4.5			0.177	
N			5.3			0.209
N1		2.54			0.100	
O			1.4			0.055
P			0.7			0.028

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

STMicroelectronics:

X0402DF 1AA2