



**X0405**

Preliminary

**SCR**

**4A SCR**

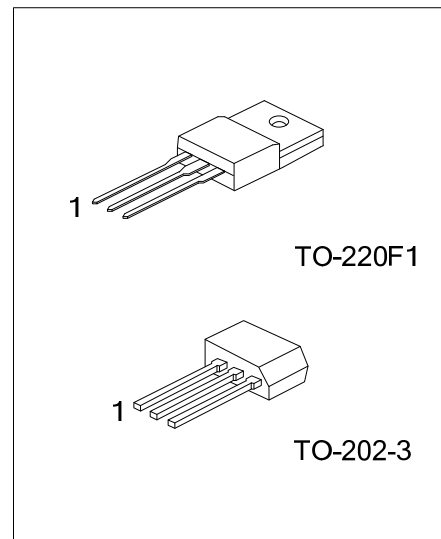
■ DESCRIPTION

The UTC **X0405** is a 4A SCR, it uses UTC's advanced technology to provide customers with highly sensitive triggering levels, etc.

The UTC **X0405** is suitable for all applications, such as motor control in kitchen aids, capacitive discharge ignitions, and overvoltage crowbar protection in low power supplies, etc.

■ FEATURES

\* Highly sensitive triggering levels



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
X0405L-x-TF1-T	X0405G-x-TF1-T	TO-220F1	K	A	G	Tube
X0405L-x-TD3-T	X0405G-x-TD3-T	TO-202-3	K	A	G	Tube

<p>X0405L-x-TF1-T</p> <p>(1)Packing Type (2)Package Type (3)Drain-Source Voltage (4)Lead Plating</p>	<p>(1) T: Tube (2) TF1: TO-220F1, TD3: TO-202-3 (3) 6: 600V, 8: 800V (4) L: Lead Free, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (limiting values)

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltages	X0405-6	600	V
	X0405-8		
RMS On-State Current (180° Conduction Angle)	TI=60°C	4	A
	T <sub>AMB</sub> =25°C		
Average On-State Current (180° Conduction Angle)	TI=60°C	2.5	A
	T <sub>AMB</sub> =25°C		
Non Repetitive Surge Peak On-State Current	tp=8.3ms, T <sub>J</sub> =25°C	33	A
	tp=10ms, T <sub>J</sub> =25°C		
I <sup>2</sup> t Value for Fusing	tp=10ms, T <sub>J</sub> =25°C	4.5	A <sup>2</sup> s
Critical Rate of Rise of On-State Current I <sub>G</sub> =2xI <sub>GT</sub> , tr≤100ns	F=60Hz, T <sub>J</sub> =125°C	50	A/μs
Peak Gate Current	tp=20μs, T <sub>J</sub> =125°C	1.2	A
Average Gate Power Dissipation	T <sub>J</sub> =125°C	0.2	W
Storage Junction Temperature	T <sub>STG</sub>	-40~+150	°C
Operating Junction Temperature	T <sub>J</sub>	-40~+125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL RESISTANCES

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (DC)	θ <sub>JA</sub>	100	°C/W
Junction to Case (DC)	θ <sub>JC</sub>	15	°C/W

■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Gate Trigger Current	I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =140Ω	20		50	μA
Gate Trigger Voltage	V <sub>GT</sub>				0.8	V
Gate Non-Trigger Voltage	V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> , R <sub>L</sub> =3.3kΩ, R <sub>GK</sub> =1kΩ, T <sub>J</sub> =125°C	0.1			V
Repetitive Gate Voltage	V <sub>RG</sub>	I <sub>RG</sub> =10μA	8			V
Holding Current	I <sub>H</sub>	I <sub>T</sub> =50mA, R <sub>GK</sub> =1kΩ			5	mA
Latching Current	I <sub>L</sub>	I <sub>G</sub> =1mA, R <sub>GK</sub> =1kΩ	6			mA
Critical Rate of Rise of Off-State Voltage	dV/dt	V <sub>D</sub> =67%V <sub>DRM</sub> , R <sub>GK</sub> =1kΩ, T <sub>J</sub> =110°C	15			V/μs
Peak On-State Voltage	V <sub>TM</sub>	I <sub>TM</sub> =8A, t <sub>p</sub> =380μs, T <sub>J</sub> =25°C			1.8	V
Threshold Voltage	V <sub>TO</sub>	T <sub>J</sub> =125°C			0.95	V
Dynamic Resistance	R <sub>D</sub>	T <sub>J</sub> =125°C			100	mΩ
Repetitive Peak Off-State Current	I <sub>DRM</sub>	V <sub>DRM</sub> =V <sub>RRM</sub> , R <sub>GK</sub> =1kΩ, T <sub>J</sub> =25°C			5	μA
	I <sub>RDM</sub>	V <sub>DRM</sub> =V <sub>RRM</sub> , R <sub>GK</sub> =1kΩ, T <sub>J</sub> =125°C			1	mA

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