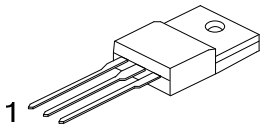
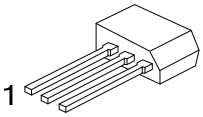
4A SCR



TO-220F1



TO-202-3

■ 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

X0405L-x-TF1-T

(1)Packing Type
(2)Package Type
(3)Drain-Source Voltage
(4)Lead Plating

(1) T: Tube
(2) TF1: TO-220F1, TD3: TO-202-3
(3) 6: 600V, 8: 800V
(4) L: Lead Free, G: Halogen Free

■ ABSOLUTE MAXIMUM RATINGS (limiting values)

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltages	X0405-6	V_{DRM}/V_{RRM}	600	V
	X0405-8		800	V
RMS On-State Current (180° Conduction Angle)	Tl=60°C	$I_{T(RMS)}$	4	A
	T_{AMB}=25°C		1.35	A
Average On-State Current (180° Conduction Angle)	Tl=60°C	$I_{T(AV)}$	2.5	A
	T_{AMB}=25°C		0.9	A
Non Repetitive Surge Peak On-State Current	tp=8.3ms, T_J=25°C	I_{TSM}	33	A
	tp=10ms, T_J=25°C		30	A
I^2t Value for Fusing	tp=10ms, T_J=25°C	I^2t	4.5	A^2s
Critical Rate of Rise of On-State Current I_G=2xI_{GT} ,tr≤100ns	F=60Hz, T_J=125°C	dI/dt	50	A/μs
Peak Gate Current	tp=20μs, T_J=125°C	I_{GM}	1.2	A
Average Gate Power Dissipation	T_J=125°C	$P_{G(AV)}$	0.2	W
Storage Junction Temperature		T_{STG}	-40~+150	°C
Operating Junction Temperature		T_J	-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_{JA}	100	°C/W
Junction to Case (DC)	θ_{JC}	15	°C/W

■ ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Gate Trigger Current	I_{GT}	V_D=12V, R_L=140Ω	20		50	μA
Gate Trigger Voltage	V_{GT}				0.8	V
Gate Non-Trigger Voltage	V_{GD}	V_D=V_{DRM}, R_L=3.3kΩ, R_{GK}=1kΩ, T_J=125°C	0.1			V
Repetitive Gate Voltage	V_{RG}	I_{RG}=10μA	8			V
Holding Current	I_H	I_T=50mA, R_{GK}=1kΩ			5	mA
Latching Current	I_L	I_G=1mA, R_{GK}=1kΩ	6			mA
Critical Rate of Rise of Off-State Voltage	dV/dt	V_D=67%V_{DRM}, R_{GK}=1kΩ, T_J=110°C	15			V/μs
Peak On-State Voltage	V_{TM}	I_{TM}=8A, t_p=380μs, T_J=25°C			1.8	V
Threshold Voltage	V_{TO}	T_J=125°C			0.95	V
Dynamic Resistance	R_D	T_J=125°C			100	mΩ
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}, R_{GK}=1kΩ, T_J=25°C			5	μA
	I_{RRM}	V_{DRM}=V_{RRM}, R_{GK}=1kΩ, T_J=125°C			1	mA