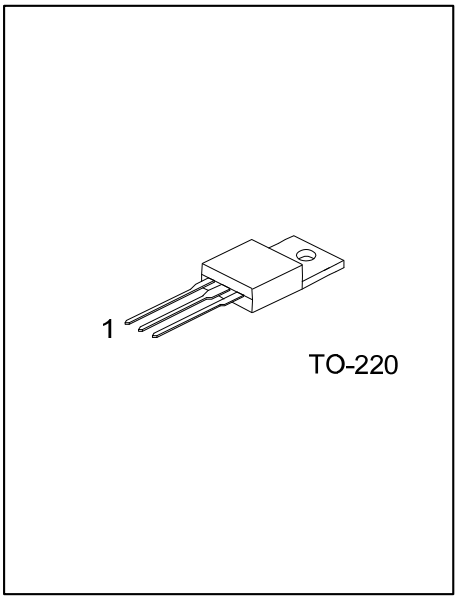
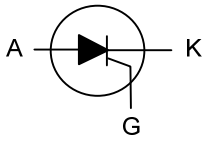
SCRS



■ DESCRIPTION

Passivated, sensitive gate thyristors in a plastic envelope, intended for use in general purpose switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

■ SYMBOL



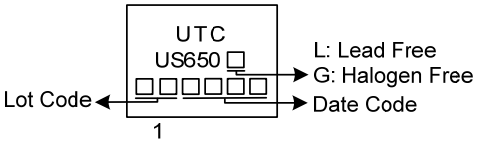
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
US650L-TA3-T	US650G-TA3-T	TO-220	K	A	G	Tube

Note: Pin Assignment: K: Cathode A: Anode G: Gate

US650G-TA3-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube (2) TA3: TO-220 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltages (Note 2)		V_{DRM},V_{RRM}	600	V
Peak Reverse Gate Voltage		V_{RGM}	5	V
Peak Gate Current (t_P=20μs, T_J=125°C)		I_{GM}	4	A
Average On-State Current (180° Conduction Angles) T_C=95°C		$I_{T(AV)}$	25	A
RMS On-State Current (180° Conduction Angles) T_C=95°C		$I_{T(RMS)}$	40	A
Non-Repetitive Peak On-State Current (Half Sine Wave, T_J=25°C Prior to Surge)	t_P=10ms	I_{TSM}	460	A
	t_P=8.3ms		480	A
I^2t For Fusing (t_P=10ms) T_J=25°C		I^2t	1060	A^2S
Repetitive Rate of Rise of On-State Current After Triggering (F=60Hz, T_J=125°C)		dI_T/dt	50	A/μs
Average Gate Power Dissipation (T_J=125°C)		$P_{G(AV)}$	1	W
Junction Temperature		T_J	-40 ~ +125	°C
Storage Temperature		T_{STG}	-40 ~ +150	°C

Note: 1. 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.
2. 1 Although not recommended, off-state voltages up to 800V may be applied without damage, but the thyristor may switch to the on-state. The rate of rise of current should not exceed 15 A/μs.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	60	°C/W
Junction to Case	θ_{JC}	0.8	°C/W

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

PARAMETER	SYMBOL	TSET CONDITIONS		MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS							
Gate Trigger Current	I_{GT}	V_D=12V, R_L=33Ω, gate open circuit		3.5		35	mA
Latching Current	I_L	V_D=1.2×I_{GT}				150	mA
Holding Current	I_H	I_T=500mA, Gate Open				75	mA
Gate Trigger Voltage	V_{GT}	V_D=12V, R_L=33Ω, gate open circuit V_D=$V_{DRM(MAX)}$, I_T=10mA, T_J=125°C, gate open circuit				1.3	V
Off-State Leakage Current	I_{DRM}, I_{RRM}	V_D=Rated V_{DRM} and V_{RRM}	T_J=25°C			5	μA
			T_J=125°C			4	mA
On-State Voltage	V_{TM}	I_{TM}=80A	T_J=25°C			1.6	V
DYNAMIC CHARACTERISTICS							
Ciritical Rate of Rise of Off-State Voltage	dV_D/dt	V_{DM}=67% $V_{DRM(MAX)}$, T_J=125°C, exponential waveform, R_{GK}=1kΩ		1000			V/μs