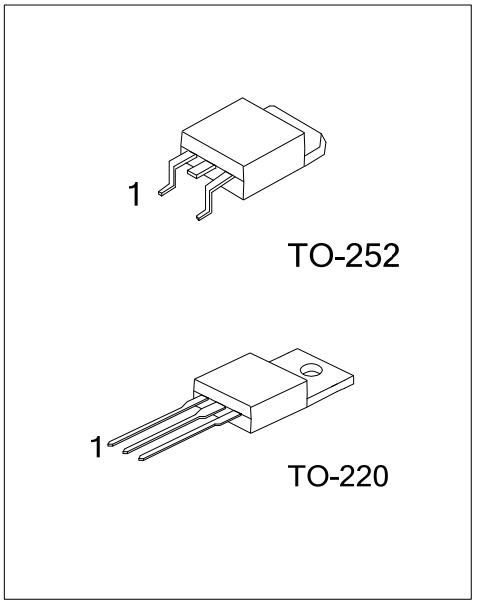
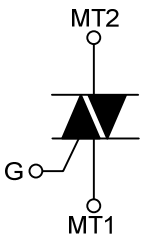
TRIAC



■ DESCRIPTION

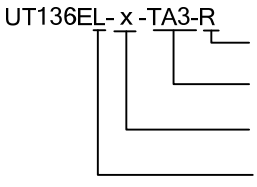
Passivated, sensitive gate triacs in a plastic envelope, suitable for surface mounting, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT136EL-x-TA3-T	UT136EG-x-TA3-T	TO-220	MT1	MT2	G	Tube
UT136EL-x-TN3-R	UT136EG-x-TN3-R	TO-252	MT1	MT2	G	Tape Reel
UT136EL-x-TN3-T	UT136EG-x-TN3-T	TO-252	MT1	MT2	G	Tube



(1) R: Tape Reel, T: Tube
(2) TA3: TO-220, TN3: TO-252
(3) 5: 500V, 6: 600V, 8: 800V
(4) G: Halogen Free, L: Lead Free

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltages		UT136E-5	V_{DRM}	500 (Note 2)	V
		UT136E-6		600 (Note 2)	V
		UT136E-8		800	V
RMS On-State Current (full sine wave, T_{MB} ≤107°C)			$I_{T(RMS)}$	4	A
Non-Repetitive Peak On-State Current (Full sine wave; T_J=25°C prior to surge)		t =20ms	I_{TSM}	25	A
		t =16.7ms		27	A
I^2t for fusing (t =10ms)			I^2t	3.1	A^2s
Repetitive Rate of Rise of On-State Current After Triggering	I_{TM}=6A, I_G=0.2A, dI_G/dt=0.2A/μs	T2+ G+	dI_T/dt	50	A/μs
		T2+ G-		50	A/μs
		T2- G-		50	A/μs
		T2- G+		10	A/μs
Peak Gate Voltage			V_{GM}	5	V
Peak Gate Current			I_{GM}	2	A
Peak Gate Power			P_{GM}	5	W
Average Gate Power (over any 20 ms period)			$P_{G(AV)}$	0.5	W
Junction Temperature			T_J	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. Although not recommended, off-state voltages up to 800V may be applied without damage, but the traic may switch to the on-state. The rate of rise of current should not exceed 3A/μs.

■ THERMAL DATA

PARAMETER			SYMBOL	RATINGS	UNIT
Junction to Ambient	Pcb Mounted	TO-220	$θ_{JA}$	60	K/W
		TO-252		75	
Junction to Mounting Base		Full Cycle	$θ_{JB}$	3.0	K/W
		Half Cycle		3.7	

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

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
STATIC							
Gate Trigger Current	I_{GT}	V_D=12V, I_T=0.1A	T2+ G+		2.5	10	mA
			T2+ G-		4.0	10	mA
			T2- G-		5.0	10	mA
			T2- G+		11	25	mA
Latching Current	I_L	V_D=12V, I_{GT}=0.1A	T2+ G+		3.0	15	mA
			T2+ G-		10	20	mA
			T2- G-		2.5	15	mA
			T2- G+		4.0	20	mA
Holding Current	I_H	V_D=12V, I_{GT}=0.1A			2.2	15	mA
On-State Voltage	V_T	I_T=5A			1.4	1.7	V
Gate Trigger Voltage	V_{GT}	V_D=12V, I_T=0.1A			0.7	1.5	V
		V_D=400V, I_T=0.1A, T_J=125°C		0.25	0.4		V
Off-State Leakage Current	I_D	V_D=$V_{DRM(MAX)}$, T_J=125°C			0.1	0.5	mA
DYNAMIC							
Critical Rate of Rise of Off-State Voltage	dV_D/dt	V_{DM}=67%$V_{DRM(max)}$, T_J=125°C, exponential waveform; gate open circuit			50		V/μs
Gate Controlled Turn-On Time	t_{GT}	I_{TM}=6A, V_D=$V_{DRM(MAX)}$, I_G=0.1A, dI_G/dt=5A/μs			2		μs

■ TYPICAL CHARACTERISTICS