

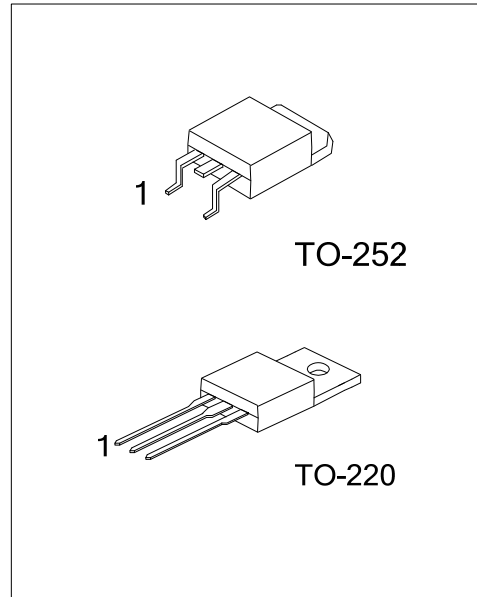
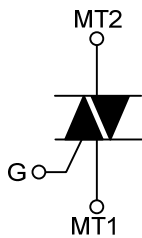


## TRIAC

### 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

<p>UT136EL-x-TA3-R</p> <ul style="list-style-type: none"> <li>(1)Packing Type</li> <li>(2)Package Type</li> <li>(3)Peak Voltage</li> <li>(4)Lead Free</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel, T: Tube</li> <li>(2) TA3: TO-220, TN3: TO-252</li> <li>(3) 5: 500V, 6: 600V, 8: 800V</li> <li>(4) G: Halogen Free, L: Lead Free</li> </ul>
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### ■ 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, $T_{MB} \leq 107^\circ\text{C}$ )		$I_{T(RMS)}$	4	A
Non-Repetitive Peak On-State Current (Full sine wave; $T_J=25^\circ\text{C}$ prior to surge)	$t=20\text{ms}$	$I_{TSM}$	25	A
	$t=16.7\text{ms}$		27	A
$I^2t$ for fusing ( $t=10\text{ms}$ )		$I^2t$	3.1	$\text{A}^2\text{s}$
Repetitive Rate of Rise of On-State Current After Triggering	$I_{TM}=6\text{A}$ , $I_G=0.2\text{A}$ , $dI_G/dt=0.2\text{A}/\mu\text{s}$	T2+ G+	50	$\text{A}/\mu\text{s}$
		T2+ G-	50	$\text{A}/\mu\text{s}$
		T2- G-	50	$\text{A}/\mu\text{s}$
		T2- G+	10	$\text{A}/\mu\text{s}$
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	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

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 triac may switch to the on-state. The rate of rise of current should not exceed  $3\text{A}/\mu\text{s}$ .

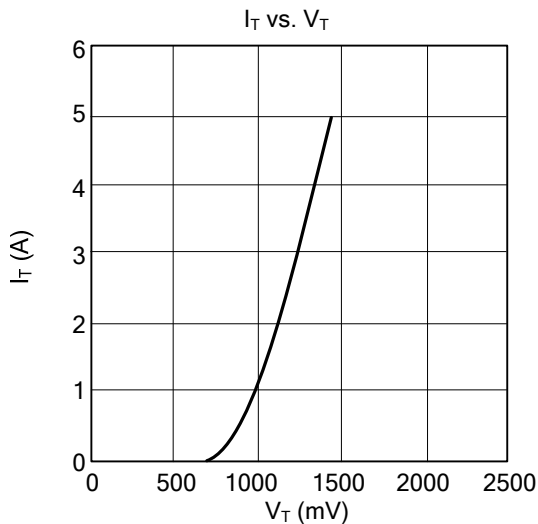
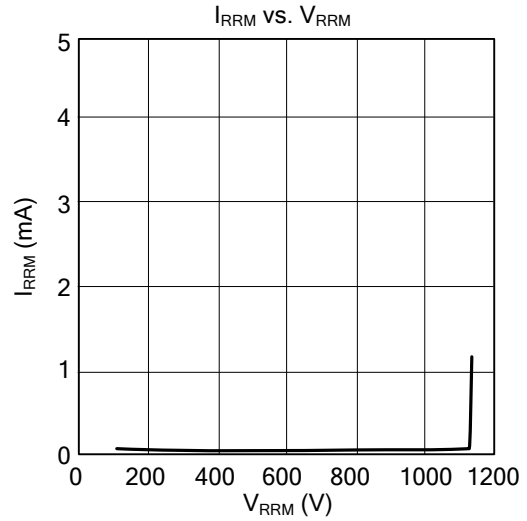
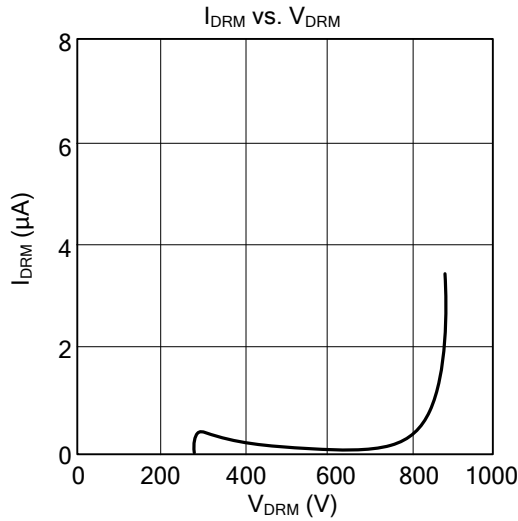
### ■ THERMAL DATA

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

### ■ ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
<b>STATIC</b>							
Gate Trigger Current	$I_{GT}$	$V_D=12\text{V}$ , $I_T=0.1\text{A}$	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	$I_L$	$V_D=12\text{V}$ , $I_{GT}=0.1\text{A}$	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	$I_H$	$V_D=12\text{V}$ , $I_{GT}=0.1\text{A}$		2.2	15	mA	
On-State Voltage	$V_T$	$I_T=5\text{A}$		1.4	1.7	V	
Gate Trigger Voltage	$V_{GT}$	$V_D=12\text{V}$ , $I_T=0.1\text{A}$		0.7	1.5	V	
		$V_D=400\text{V}$ , $I_T=0.1\text{A}$ , $T_J=125^\circ\text{C}$	0.25	0.4		V	
Off-State Leakage Current	$I_D$	$V_D=V_{DRM(MAX)}$ , $T_J=125^\circ\text{C}$		0.1	0.5	mA	
<b>DYNAMIC</b>							
Critical Rate of Rise of Off-State Voltage	$dV_D/dt$	$V_{DM}=67\%V_{DRM(max)}$ , $T_J=125^\circ\text{C}$ , exponential waveform; gate open circuit		50		$\text{V}/\mu\text{s}$	
Gate Controlled Turn-On Time	$t_{GT}$	$I_{TM}=6\text{A}$ , $V_D=V_{DRM(MAX)}$ , $I_G=0.1\text{A}$ , $dI_G/dt=5\text{A}/\mu\text{s}$		2		$\mu\text{s}$	

■ TYPICAL CHARACTERISTICS



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