



UZ0103

TRIAC

1A TRIAC

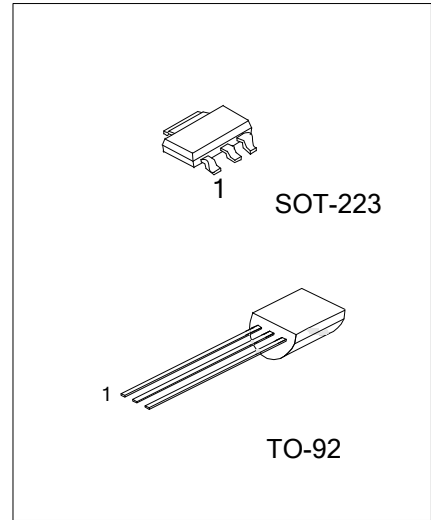
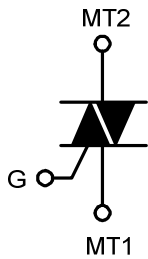
■ DESCRIPTION

The UTC **UZ0103** is a 1A triac, it is suitable for general purpose AC switching applications, fan speed controllers and home appliances.

■ FEATURES

- * $I_{GT} \leq 3mA$ (I-II-III), $I_{GT} \leq 5mA$ (IV)
- $I_{TSM} \leq 8A$ ($t=20ms$), $I_{TSM} \leq 8.5A$ ($t=16.7ms$)
- $I_{T(RMS)} \leq 1A$

■ SYMBOL



■ ORDERING INFORMATION

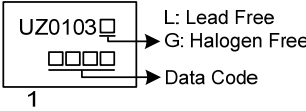
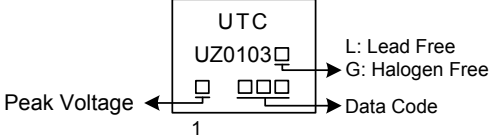
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UZ0103L-x-AA3-R	UZ0103G-x-AA3-R	SOT-223	MT1	MT2	GATE	Tape Reel
UZ0103L-x-T92-B	UZ0103G-x-T92-B	TO-92	MT1	GATE	MT2	Tape Box
UZ0103L-x-T92-K	UZ0103G-x-T92-K	TO-92	MT1	GATE	MT2	Bulk

<p>UZ0103G-x-AA3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Peak Voltage (4) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AA3: SOT-223, T92: TO-92 (3) 6: 600V, 8: 800V (4) G: Halogen Free and Lead Free, L: Lead Free
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■ SENSITIVITY AND TYPE

VOLTAGE CODE	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
6	⊙		3mA	STANDARD
8		⊙	3mA	STANDARD

MARKING

SOT-223	TO-92
 <p>UZ0103□ □□□□ 1</p> <p>L: Lead Free G: Halogen Free Data Code</p>	 <p>UTC UZ0103□ □□□□ 1</p> <p>Peak Voltage ← L: Lead Free G: Halogen Free Data Code</p>

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage	UZ0103-6	V_{DRM}	600	V
	UZ0103-8		800	V
Repetitive Peak Reverse Voltage	UZ0103-6	V_{RRM}	600	V
	UZ0103-8		800	V
RMS On-State Current (full sine wave)	$T_L=50^\circ\text{C}$	$I_{T(RMS)}$	1	A
Non Repetitive Surge Peak On-State Current (full cycle, T_J initial= 25°C)	F=50Hz, $t=20\text{ms}$	I_{TSM}	8	A
	F=60Hz, $t=16.7\text{ms}$		8.5	A
I^2t Value for Fusing	$t_p=10\text{ms}$	I^2t	0.35	A^2s
Critical Rate of Rise of On-State Current: $I_G=2 \cdot I_{GT}$, $t_r \leq 100\text{ns}$	F=120Hz, $T_J=125^\circ\text{C}$	di/dt	20	$\text{A}/\mu\text{s}$
Peak Gate Current	$t_p=20\mu\text{s}$, $T_J=125^\circ\text{C}$	I_{GM}	1	A
Average Gate Power Dissipation	$T_J=125^\circ\text{C}$	$P_{G(AV)}$	1	W
Operating Junction Temperature		T_J	-40~+125	$^\circ\text{C}$
Storage Junction Temperature		T_{STG}	-40~+150	$^\circ\text{C}$

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	TO-92	θ_{JA}	150	$^\circ\text{C}/\text{W}$
	SOT-223		60	$^\circ\text{C}/\text{W}$
Junction to Case	TO-92	θ_{JC}	60	$^\circ\text{C}/\text{W}$
	SOT-223		25	$^\circ\text{C}/\text{W}$

Note: S=Copper surface under tab

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

PARAMETER	SYMBOL	TEST CONDITIONS	QUADRANT	MIN	TYP	MAX	UNIT
Repetitive Peak Off-State or Reverse Current	I_{DRM} , I_{RRM}	$V_{DRM}=V_{RRM}$	$T_J=25^\circ\text{C}$			5	μA
			$T_J=125^\circ\text{C}$			0.5	mA
Gate Trigger Current (Note 1)	I_{GT}	$V_D=12\text{V}$, $R_L=30\Omega$	I-II-III			3	mA
			IV			5	mA
Gate Trigger Voltage	V_{GT}		ALL			1.3	V
Gate Non-Trigger Voltage	V_{GD}	$V_D=V_{DRM}$, $R_L=3.3\text{k}\Omega$, $T_J=125^\circ\text{C}$	ALL	0.2			V
Holding Current (Note 2)	I_H	$I_T=50\text{mA}$				7	mA
Latching Current	I_L	$I_G=1.2I_{GT}$	I-III-IV			7	mA
			II			15	mA
Rise of Off-State Voltage (Note 2)	dV_D/dt	$V_D=67\%V_{DRM}$, Gate Open, $T_J=110^\circ\text{C}$		10			$\text{V}/\mu\text{s}$
Rise of Off-State Voltage at Commutation (Note 2)	$(dV_{COM}/dt)_C$	$(di/dt)_C=0.44\text{A}/\text{ms}$, $T_J=110^\circ\text{C}$		0.5			$\text{V}/\mu\text{s}$
On-State Voltage (Note 2)	V_{TM}	$I_T=1.4\text{A}$, $t_p=380\mu\text{s}$, $T_J=25^\circ\text{C}$				1.56	V
Dynamic Resistance (Note 2)	R_D	Dynamic resistance, $T_J=125^\circ\text{C}$				400	$\text{m}\Omega$

Notes: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

2. For both polarities of MT2 referenced to MT1.

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