



UZ0103

Preliminary

TRIACS

1A TRIACS

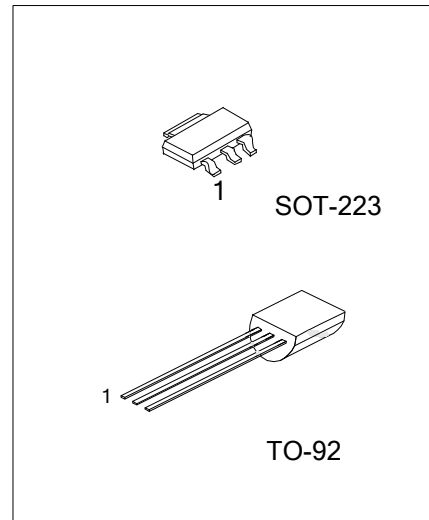
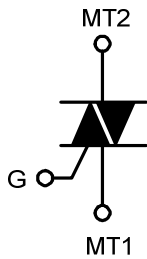
DESCRIPTION

The UTC **UZ0103** is a 1A triacs, 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	
UZ0103XL-T92-B	UZ0103XG-T92-B	TO-92	MT1	GATE	MT2	Tape Box
UZ0103XL-T92-K	UZ0103XG-T92-K	TO-92	MT1	GATE	MT2	Bulk
UZ0103XL-T92-R	UZ0103XG-T92-R	TO-92	MT1	GATE	MT2	Tape Reel
UZ0103XL-AA3-R	UZ0103XG-AA3-R	SOT-223	MT1	MT2	GATE	Tape Reel

<p>UZ0103XL-T92-B</p> <p>(1)Packing Type (2)Package Type (3)Lead Free (4)Voltage Code</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) T92: TO-92, AA3: SOT-223 (3) L: Lead Free, G: Halogen Free (4) M: 600V, N: 800V</p>
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SENSITIVITY AND TYPE

VOLTAGE CODE	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
M	⊙		3mA	STANDARD
N		⊙	3mA	STANDARD

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT	
Repetitive Peak Off-State Voltage	V_{DRM}	UZ0103M	600	V
		UZ0103N	800	V
Repetitive Peak Reverse Voltage	V_{RRM}	UZ0103M	600	V
		UZ0103N	800	V
RMS On-State Current (full sine wave)	$I_{T(RMS)}$	$T_L=50^{\circ}C$	1	A
Non Repetitive Surge Peak On-State Current (full cycle, T_J initial= $25^{\circ}C$)	I_{TSM}	F=50Hz, $t=20ms$	8	A
		F=60Hz, $t=16.7ms$	8.5	A
I^2t Value for Fusing	I^2t	$t_p=10ms$	0.35	A^2s
Critical Rate of Rise of On-State Current: $I_G=2 \cdot I_{GT}$, $t_r \leq 100ns$	di/dt	F=120Hz, $T_J=125^{\circ}C$	20	$A/\mu s$
Peak Gate Current	I_{GM}	$t_p=20\mu s$, $T_J=125^{\circ}C$	1	A
Average Gate Power Dissipation	$P_{G(AV)}$	$T_J=125^{\circ}C$	1	W
Operating Junction Temperature	T_J		-40~+125	$^{\circ}C$
Storage Junction Temperature	T_{STG}		-40~+150	$^{\circ}C$

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

Note: S=Copper surface under tab.

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

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

Notes: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.
2. For both polarities of A2 referenced to A1.

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