



UZ0103

Preliminary

TRIAC

1A TRIAC

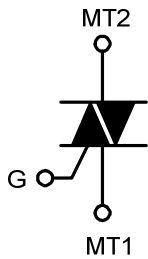
DESCRIPTION

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



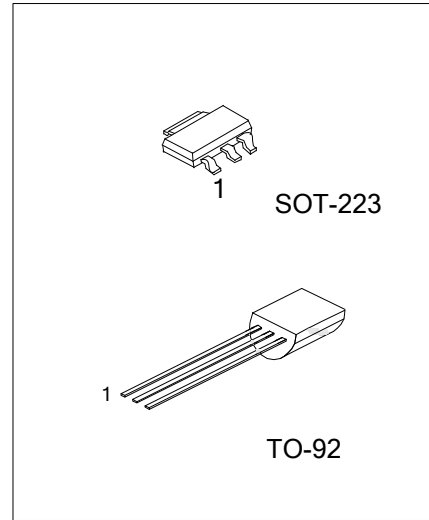
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	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

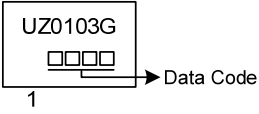
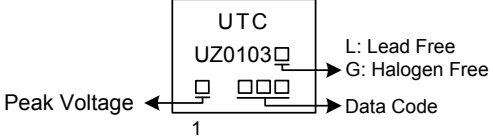
UZ0103G-x-AA3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AA3: SOT-223, T92: TO-92
	(3)Peak Voltage	(3) 6: 600V, 8: 800V
	(4)Green Package	(4) G: Halogen Free and Lead Free, L: Lead Free

SENSITIVITY AND TYPE

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



■ MARKING

SOT-223	TO-92
 <p>UZ0103G □□□□ → Data Code 1</p>	 <p>UTC UZ0103□ □□□□ → Data Code 1</p> <p>Peak Voltage ←</p> <p>→ L: Lead Free → G: Halogen Free</p>

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT	
Repetitive Peak Off-State Voltage	V_{DRM}	UZ0103-6	600	V
		UZ0103-8	800	V
Repetitive Peak Reverse Voltage	V_{RRM}	UZ0103-6	600	V
		UZ0103-8	800	V
RMS On-State Current (full sine wave)	$I_{T(RMS)}$	1	A	
Non Repetitive Surge Peak On-State Current (full cycle, T_J initial=25°C)	I_{TSM}	F=50Hz, t=20ms	8	A
		F=60Hz, t=16.7ms	8.5	A
I^2t Value for Fusing	I^2t	0.35	A ² s	
Critical Rate of Rise of On-State Current: $I_G=2 \cdot I_{GT}$, $t_r \leq 100$ ns	di/dt	20	A/ μ s	
Peak Gate Current	I_{GM}	1	A	
Average Gate Power Dissipation	$P_{G(AV)}$	1	W	
Operating Junction Temperature	T_J	-40~+125	°C	
Storage Junction Temperature	T_{STG}	-40~+150	°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	°C/W
		SOT-223	60	°C/W
Junction to Case	θ_{JC}	TO-92	60	°C/W
		SOT-223	25	°C/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			V/ μ s
Rise of Off-State Voltage at Commutation (Note 2)	$(dV_{COM}/dt)_C$	$(di/dt)_C=0.44\text{A/ms}$, $T_J=110^\circ\text{C}$		0.5			V/ μ s
On-State Voltage (Note 2)	V_{TM}	$I_{TM}=1.4\text{A}$, $t_p=380\mu\text{s}$, $T_J=25^\circ\text{C}$				1.56	V
Dynamic Resistance (Note 2)	R_D	Dynamic resistance, $T_J=125^\circ\text{C}$				400	m Ω

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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