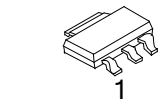
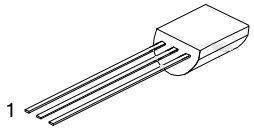
1A TRIACS



SOT-223



TO-92

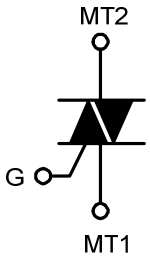
■ DESCRIPTION

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

UZ0103XL-T92-B
(1)Packing Type
(2)Packing Type
(3)Lead Free
(4)Voltage Code

(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

■ SENSITIVITY AND TYPE

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

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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage	UZ0103M	V_{DRM}	600	V
	UZ0103N		800	V
Repetitive Peak Reverse Voltage	UZ0103M	V_{RRM}	600	V
	UZ0103N		800	V
RMS On-State Current (full sine wave)	T_L=50°C	$I_{T(RMS)}$	1	A
Non Repetitive Surge Peak On-State Current (full cycle, T_J initial=25°C)	F=50Hz, t=20ms	I_{TSM}	8	A
	F=60Hz, t=16.7ms		8.5	A
I^2t Value for Fusing	t_p=10ms	I^2t	0.35	A^2s
Critical Rate of Rise of On-State Current: I_G=2*I_{GT}, t_r≤100ns	F=120Hz, T_J=125°C	dI/dt	20	A/μs
Peak Gate Current	t_p=20μs, T_J=125°C	I_{GM}	1	A
Average Gate Power Dissipation	T_J=125°C	$P_{G(AV)}$	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	TO-92	$θ_{JA}$	150	°C/W
	SOT-223		60	°C/W
Junction to Case	TO-92	$θ_{JC}$	60	°C/W
	SOT-223		25	°C/W

Note: S=Copper surface under tab.

■ ELECTRICAL CHARACTERISTICS (T_J=25°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°C			5	μA
			T_J=125°C			0.5	mA
Gate Trigger Current (Note 1)	I_{GT}	V_D=12V, R_L=30Ω	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=3.3kΩ, T_J=125°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°C		10			V/μs
Rise of Off-State Voltage at Commutation (Note 2)	$(dV_{COM}/dt)c$	(dI/dt)c=0.44A/ms, T_J=110°C		0.5			V/μs
On-State Voltage (Note 2)	V_{TM}	I_{TM}=1.4 A, t_p=380μs, T_J=25°C				1.56	V
Dynamic Resistance (Note 2)	R_D	Dynamic resistance, T_J=125°C				400	mΩ

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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