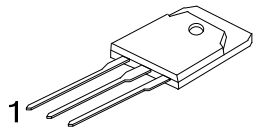
40A STANDARD TRIAC



TO-3P

■ DESCRIPTION

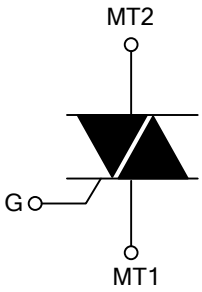
The UTC **BTB40** is a 40A standard triac, it uses UTC's advanced technology to provide customers with low thermal resistance with clip bonding and high commutation capability, etc.

The UTC **BTB40** is suitable for general purpose AC switching, heating regulation and on/off function in static relays, etc.

■ FEATURES

* Low thermal resistance with clip bonding
* High current capability
* High commutation capability

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BTB40L-x-xx-T3P-T	BTB40G-x-xx-T3P-T	TO-3P	MT1	MT2	G	Tube

BTB40L-x-x-T3P-T

(1)Packing Type
(2)Package Type
(3)Sensitivity and type
(4)Voltage
(5)Lead Free

(1) T: Tube
(2) T3P: TO-3P
(3) refer to SENSITIVITY AND TYPE
(4) 6: 600V, 8: 800V
(5) L: Lead Free, G: Halogen Free

■ SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
B	◎	◎	50mA	STANDARD

◎: Available

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
On-State RMS Current (Full Sine Wave)	T_C=95°C	$I_{T(RMS)}$	40	A
Non Repetitive Surge Peak On-State Current (Full Cycle, T_J initial=25°C)	F=50Hz, t=20ms	I_{TSM}	400	A
	F=60Hz, t=16.7ms		420	A
I^2t Value for Fusing	t_p=10ms	I^2t	1000	A^2s
Critical Rate of Rise of On-State Current: I_G=2xI_{GT}, t_r≤100ns	F=120Hz, T_J=125°C	dI/dt	50	A/μs
Non Repetitive Surge Peak Off-State Voltage	t_p=10ms, T_J=25°C	V_{DSM}/V_{RSM}	V_{DSM}/V_{RSM}+100	V
Peak Gate Current	t_p=20μs, T_J=125°C	I_{GM}	8	A
Average Gate Power Dissipation	T_J=125°C	$P_{G(AV)}$	1	W
Storage Junction Temperature		T_{STG}	-40~+150	°C
Operating Junction Temperature		T_J	-40~+125	°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.

■ DEVICE SUMMARY

PARAMETER	SYMBOL	RATINGS	UNIT
On-State RMS Current	$I_{T(RMS)}$	40	A
Repetitive Peak Off-State Voltage	V_{DRM}/V_{RRM}	600	V
Triggering Gate Current	I_{GT}	50	mA

■ THERMAL RESISTANCES

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	50	°C/W
Junction to Case (AC)	θ_{JC}	0.6	°C/W

■ ELECTRICAL CHARACTERISTICS (T_J=25 °C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Gate Trigger Current (Note 1)	I_{GT}	V_D=12V, R_L=33Ω	I-II-III			50	mA
			IV			100	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=500mA				80	mA
Latching Current	I_L	I_G=1.2I_{GT}	I-III-IV			70	mA
			II			160	mA
Critical Rate of Rise of Off-State Voltage (Note 2)	dV/dt	V_D=67%V_{DRM}, Gate Open, T_J=125°C		500			V/μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dV/dt)c	(dI/dt)c=20A/ms, T_J=125°C		10			V/μs

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 1)	V_T	I_{TM}=60A, t_p=380μs, T_J=25°C			1.55	V
Threshold Voltage (Note 2)	V_{TO}	T_J=125°C			0.85	V
Dynamic Resistance (Note 2)	R_D	T_J=125°C			10	mΩ
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}, T_J=25°C			5	μA
	I_{RRM}	V_{DRM}=V_{RRM}, T_J=125°C			5	mA

Notes: 1. Minimum I_{GT} is guaranted at 5% of I_{GT} max.
2. For both polarities of MT2 referenced to MT1