



JST20E-600CW 20A TRIAC

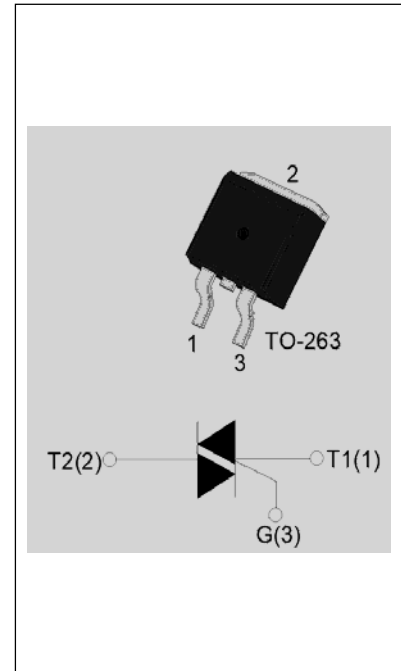
Rev.A.1.0

DESCRIPTION:

The JST20E-600CW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. JST20E-600CW snubberless triac is especially recommended for use on inductive loads. Package TO-263 is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	20	A
V_{DRM}/V_{RRM}	600	V
$I_{GT} / /$	35/35/35	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-125	
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600	V
RMS on-state current ($T_c = 96^\circ\text{C}$)	$I_{T(RMS)}$	20	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	200	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		220	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	200	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	di/dt	100	$\text{A}/\mu\text{s}$
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.8)	V_{pp}	4	kV

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V R_L=33$	- -	MAX.	35	mA
V_{GT}		- -	MAX.	1	V
V_{GD}	$V_D=V_{DRM} T_j=125$ $R_L=3.3K$	- -	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	-	MAX.	50	mA
				60	
I_H	$I_T=500mA$		MAX.	40	mA
dV/dt	$V_D=400V$ Gate Open $T_j=125$		MIN.	2000	V/ μs
(dI/dt) _c	(dV/dt) _c =20V/ μs $T_j=125$		MIN.	20	A/ms
t_{on}	$I_G=40mA I_A=200mA I_R=20mA$ $T_j=25$		TYP.	7	μs
t_{off}				50	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=28A t_p=380\mu s$	$T_j=25$	1.4	V
V_{TO}	Threshold voltage	$T_j=125$	0.75	V
R_D	Dynamic resistance	$T_j=125$	20	m
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	μA
I_{RRM}		$T_j=125$	0.8	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.1	/W
$R_{th(j-a)}$	junction to ambient (AC, in free air, S=2cm ²)	45	/W

FIG.1 Maximum power dissipation versus RMS on-state current

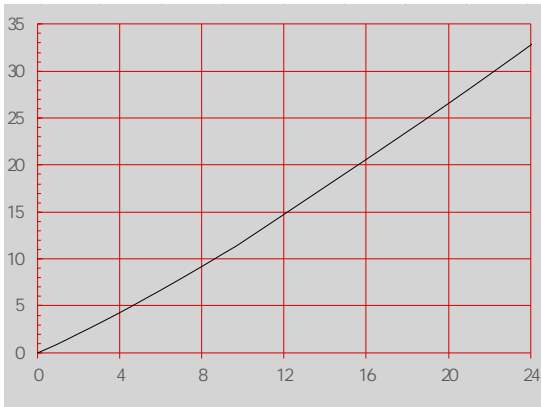


FIG.2: RMS on-state current versus case temperature



FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

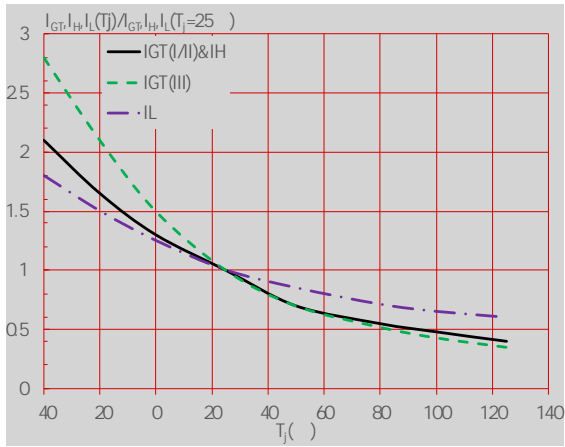
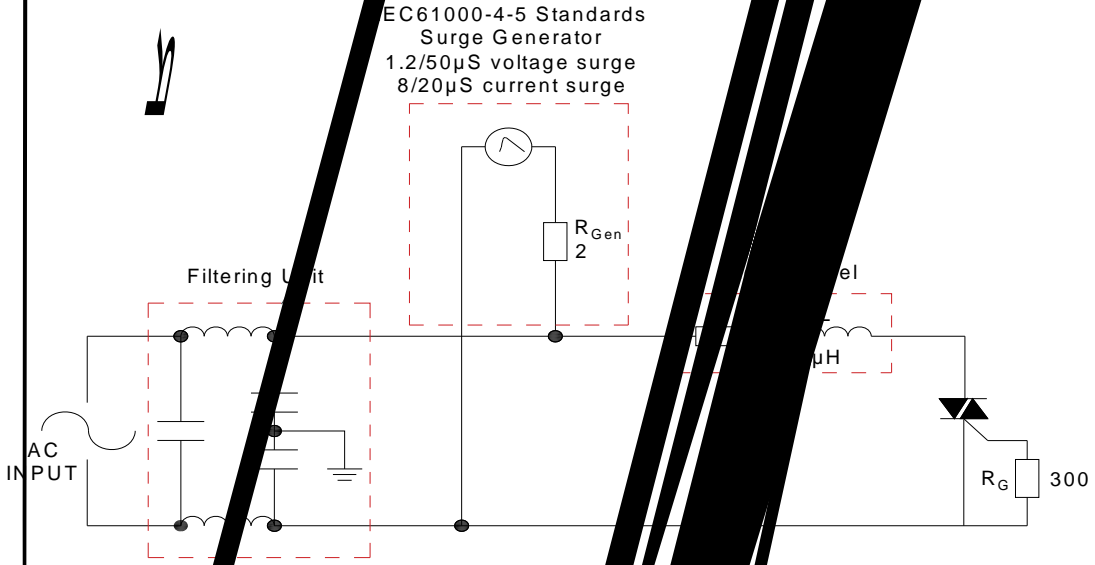


FIG.8 Test circuit for inductive and resistive loads to EC61000-4-5 standards



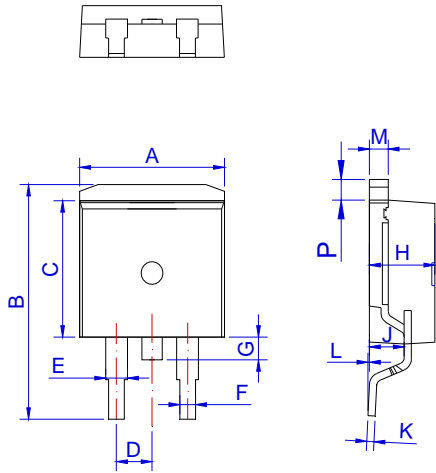
**ORDERING INFORMATION**

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		- -			
JST20E-600CW	600	35	TO-263	50	Tube
JST20E-600CW-TR				800	Tape & Reel

Document Revision History

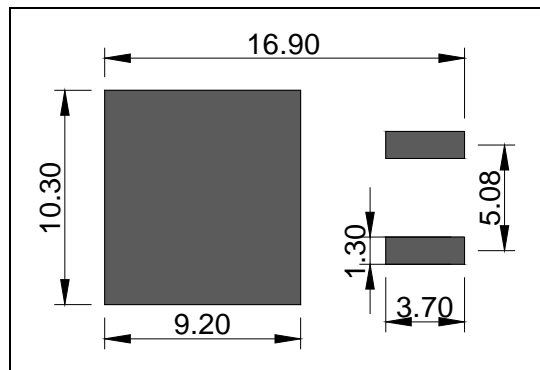
Date	Revision	Changes
Apr.12, 2023	A.1.0	Last updated

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.37		0.378
D	2.40		2.70	0.094		0.106
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G	1.00		1.50	0.039		0.059
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053
P	1.20		1.50	0.047		0.059

FOOTPRINT TO 263 (dimensions in mm)



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