

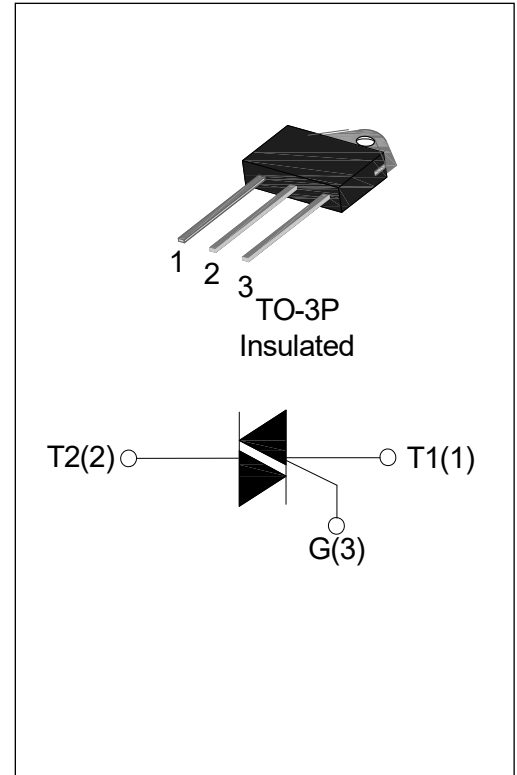


## JST41Z-1600BW 40A TRIACs

Rev.1

### DESCRIPTION:

With high ability to withstand the shock loading of large current, JST41Z-1600BW triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, especially recommended for use on inductive load. From all three terminals to external heatsink, JST41Z-1600BW provides a rated insulation voltage of 2500 V<sub>RMS</sub>, complying with UL standards (File ref: E252906).  
 Package TO-3P is RoHS compliant. (2011/65/EU)



### MAIN FEATURES

Symbol	Value	Unit
I <sub>T(RMS)</sub>	40	A
V <sub>DRM</sub> /V <sub>RPM</sub>	1600	V

### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T <sub>stg</sub>	-40-150	°C
Operating junction temperature range	T <sub>j</sub>	-40-125	°C
Repetitive peak off-state voltage (T <sub>j</sub> =25°C)	V <sub>DRM</sub>	1600	V
Repetitive peak reverse voltage (T <sub>j</sub> =25°C)	V <sub>RPM</sub>	1600	V
RMS on-state current	I <sub>T(RMS)</sub>	40	A
TO-3P(Ins) (T <sub>c</sub> =75°C)			
Non repetitive surge peak on-state current (full cycle, tp=16.7ms)	I <sub>TSM</sub>	420	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	1000	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> = 2 × I <sub>GT</sub> )	di/dt	50	A/μs
Peak gate current	I <sub>GM</sub>	8	A
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Peak gate power	P <sub>GM</sub>	10	W

ELECTRICAL CHARACTERISTICS ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
$I_{GT}$	$V_D=12\text{V}$ $R_L=33\Omega$	I - II -III	MAX	50	mA
$V_{GT}$		I - II -III	MAX	1.3	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	I - II -III	MIN	0.2	V
$I_L$	$I_G=1.2I_{GT}$	I -III	MAX	80	mA
		II		200	
$I_H$	$I_T=100\text{mA}$		MAX	100	mA
dv/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	1500	V/ $\mu\text{s}$

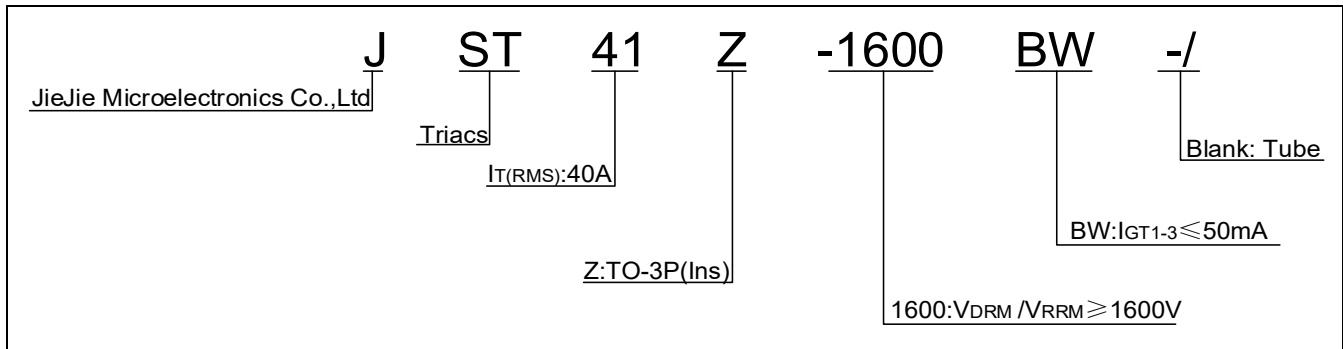
## STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=60\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.8	V
$V_{TO}$	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.97	V
$R_d$	Dynamic resistance	$T_j=125^{\circ}\text{C}$	22	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	10	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	5	mA

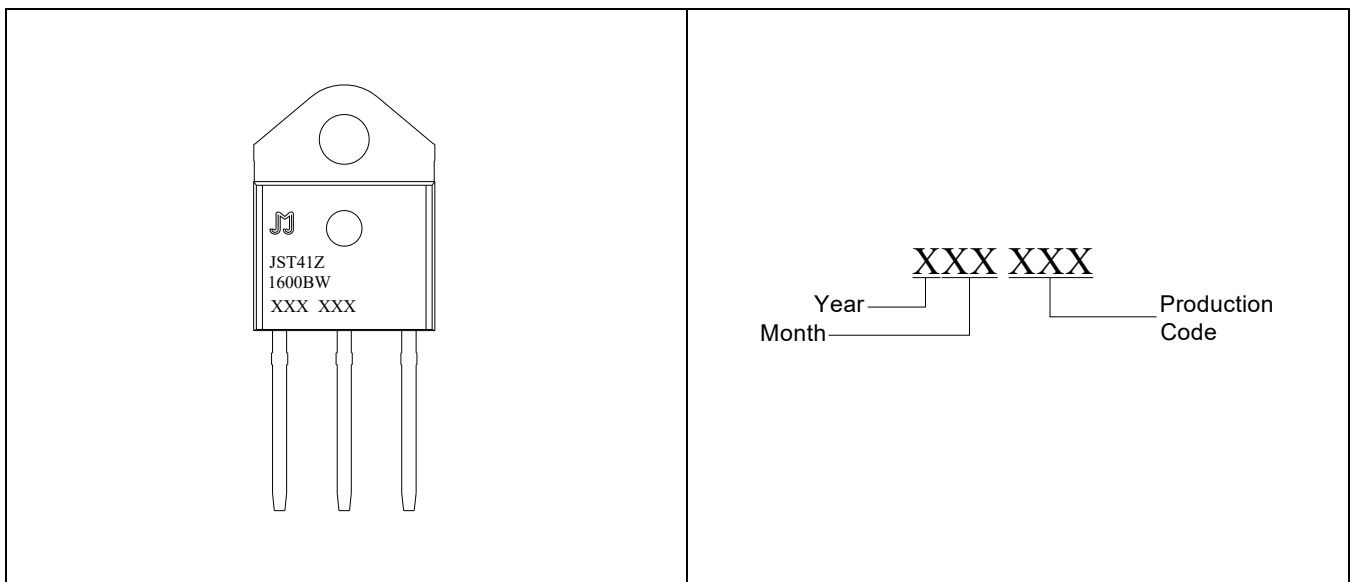
## THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P(Ins)	0.6	$^{\circ}\text{C}/\text{W}$

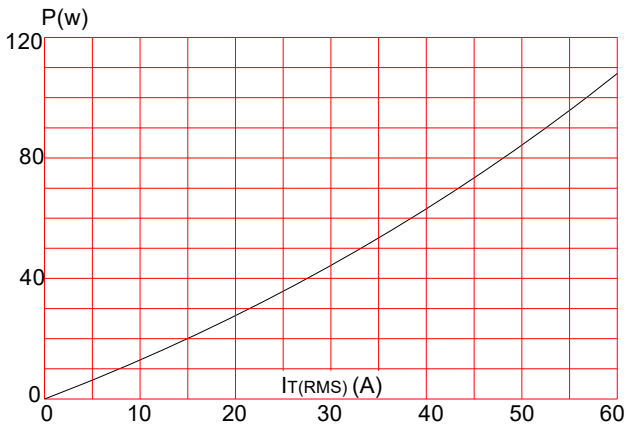
## ORDERING INFORMATION



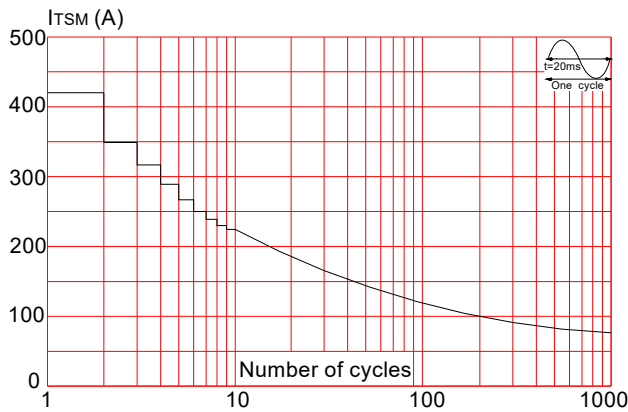
## MARKING



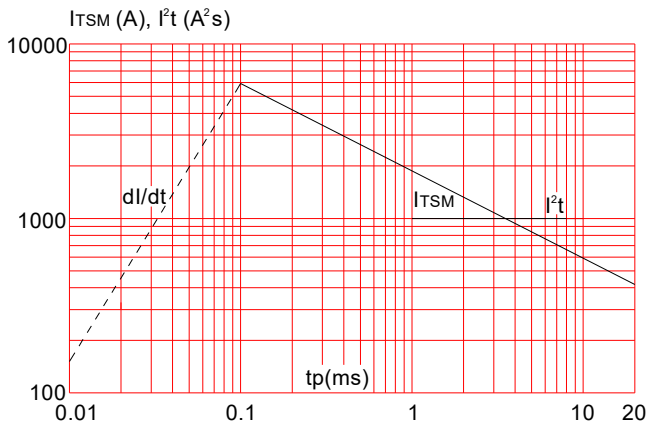
**FIG.1** Maximum power dissipation versus RMS on-state current



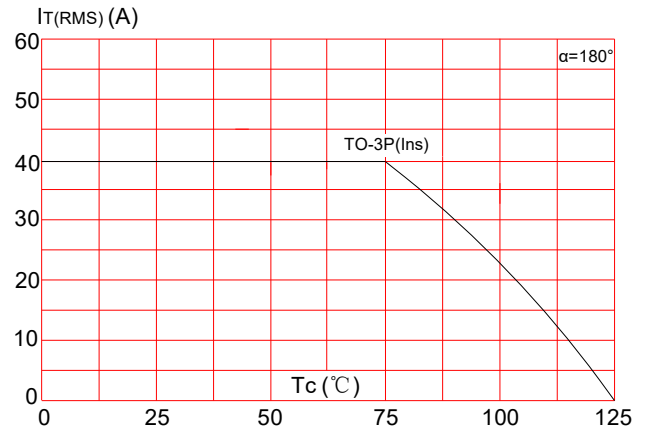
**FIG.3:** Surge peak on-state current versus number of cycles



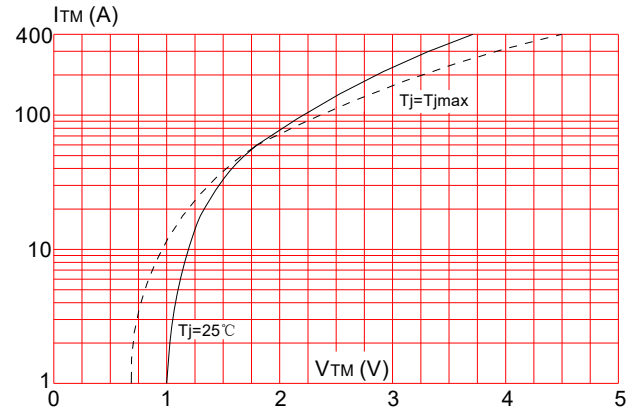
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



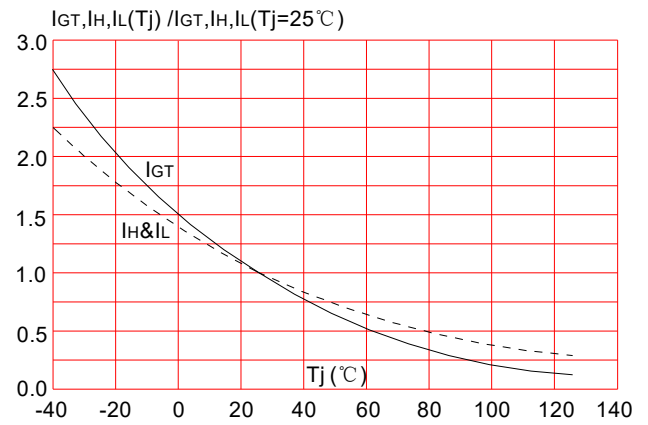
**FIG.2:** RMS on-state current versus case temperature



**FIG.4:** On-state characteristics (maximum values)



**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature



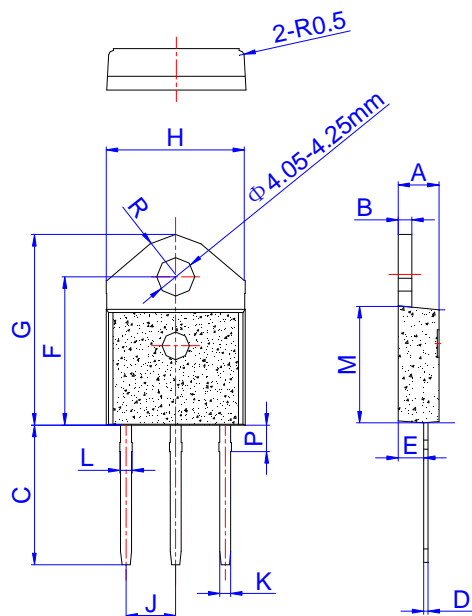
**ORDERING INFORMATION**

<b>Order code</b>	<b>Voltage V<sub>DRM</sub>/V<sub>RPM</sub> (V)</b>	<b>IGT(mA)</b>	<b>Package</b>	<b>Base qty. (pcs)</b>	<b>Delivery mode</b>
<b>JST41Z-1600BW</b>	<b>1600</b>	<b>50</b>	<b>TO-3P(Ins)</b>	<b>30</b>	<b>Tube</b>

**Document Revision History**

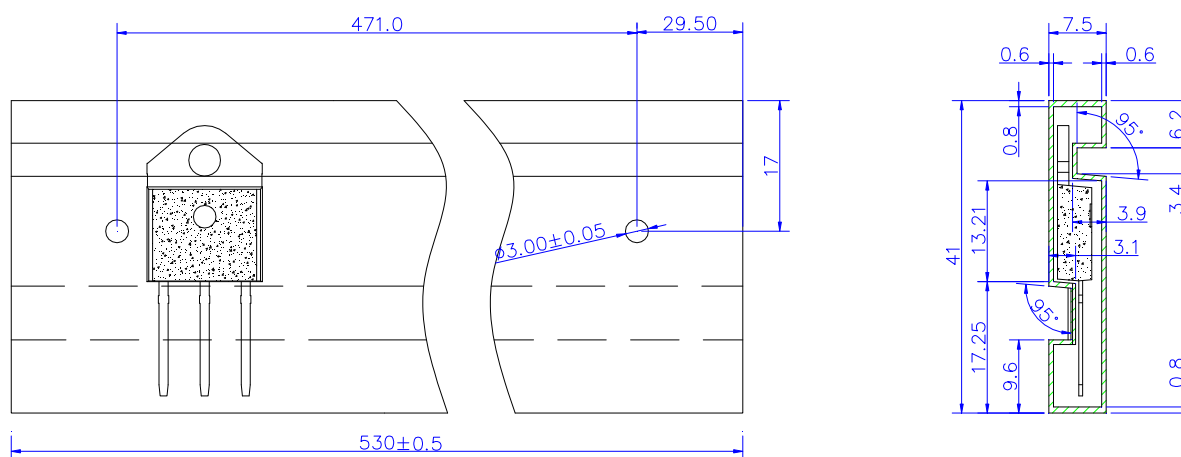
<b>Date</b>	<b>Revision</b>	<b>Changes</b>
Mar 27, 2022	1	Last update

**PACKAGE MECHANICAL DATA**



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.25		1.45	0.049		0.057
M	12.37		12.77	0.487		0.503
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

**DELIVERY MODE**



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-3P	TUBE	30	450	2,250



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