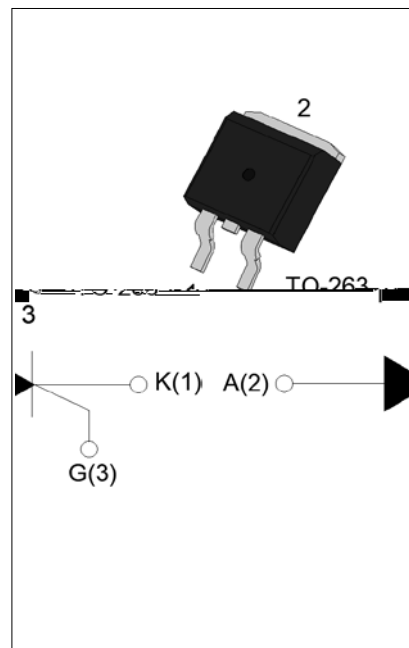




DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1612E provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on hair straightener Ëmotorcycle voltage regulator etc. Package TO-263 is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
$V_{DRM}/V_{RRM}$	1600	V
$I_{GT}$	"15	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 ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	1600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	1600	V
Average on-state current ( $T_c 0 106^\circ\text{C}$ )	$I_{T(AV)}$	7.5	A
RMS on-state current ( $T_c 0 106^\circ\text{C}$ )	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current ( $t_p=10\text{ms}, T_j=25^\circ\text{C}$ )	$I_{TSM}$	120	A
Non repetitive surge peak on-state current ( $t_p=8.3\text{ms}, T_j=25^\circ\text{C}$ )		130	
$I^2t$ value for fusing ( $t_p=10\text{ms}, T_j=25^\circ\text{C}$ )	$I^2t$	72	$\text{A}^2\text{s}$
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	$\text{A/s}$
Peak gate current ( $t_p=20^\mu\text{s}, T_j=125^\circ\text{C}$ )	$I_{GM}$	4	A
Average gate power dissipation ( $T_j=125^\circ\text{C}$ )	$P_{G(AV)}$	1	W

Peak gate power	$P_{GM}$	5	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive,off-state;FIG.8)	$V_{pp}$	1.8	kV

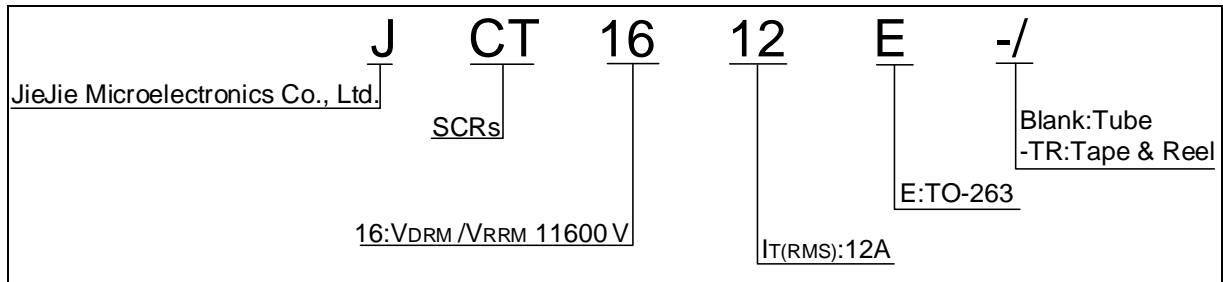
### ELECTRICAL CHARACTERISTICS (unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12V R_L=33$	-	-	15	mA
$V_{GT}$		-	-	1	V
$V_{GD}$	$V_D=V_{DRM} T_j=125 R_L=3.3K$	0.2	-	-	V
$I_L$	$I_G=1.2I_{GT}$	-	-	40	mA
$I_H$	$I_T=500mA$	-	-	30	mA
dV/dt	$V_D=1070V$ Gate Open $T_j=125$	3000	-	-	V/s
$t_{on}$	$I_G=20mA I_A=200mA I_R=20mA$ $T_j=25$	-	3	-	s
$t_{off}$		-	40	-	s

### STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=16A t_p=380 s$	$T_j=25$	1.6	V
$V_{TO}$	Threshold voltage	$T_j=125$	0.79	V

ORDERING INFORMATION



MARKING

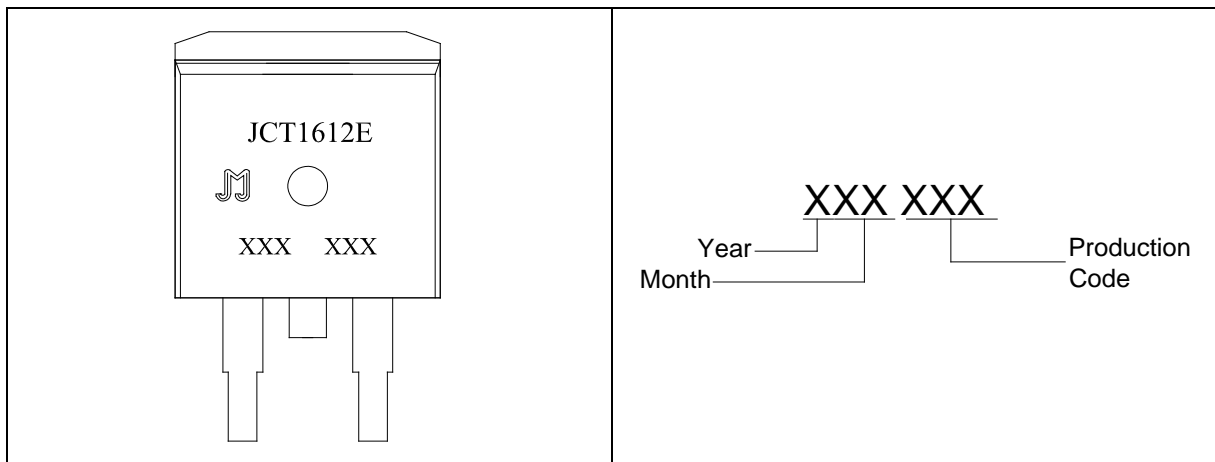


FIG.1 Maximum power dissipation versus RMS on-state current



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 ÖTest circuit for inductive and resistive loads to IEC-61000-4-5 standards.



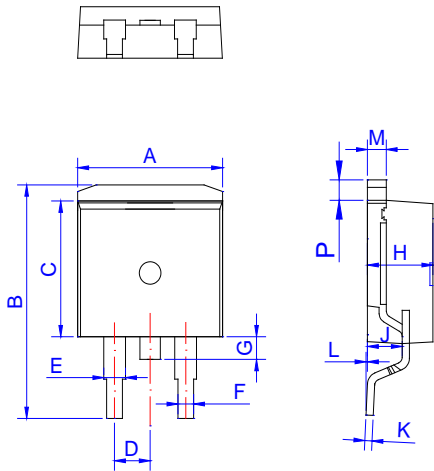
## ORDERING INFORMATION

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1612E	1600	15	TO-263	50	Tube
JCT1612E-TR				800	Tape & Reel

## Document Revision History

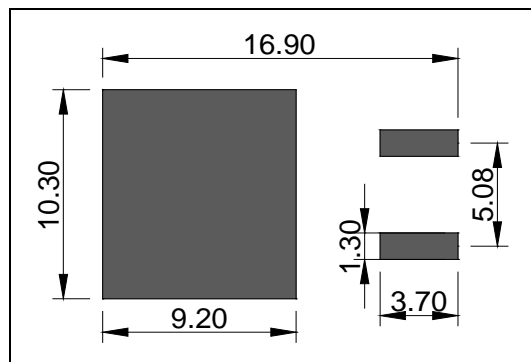
Date	Revision	Changes
Aug.11, 2023	A.1.0	Last update

PACKAGE MECHANICAL DATA



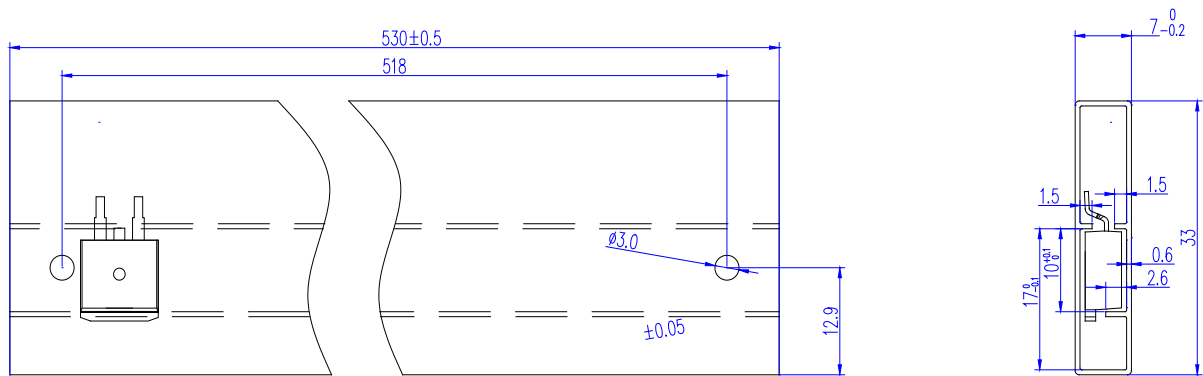
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.37		0.378
D	2.40		2.70	0.094		0.106
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G	1.00		1.50	0.039		0.059
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		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

FOOTPRINTO-263(dimensions in mm)

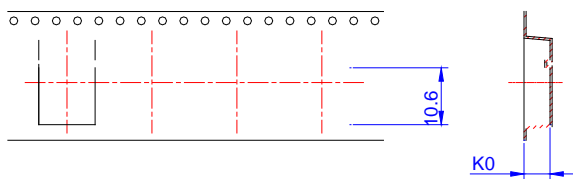




DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	5,000



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	23.70	24.00	24.30	0.933	0.945	0.957
E	1.65	1.75	1.85	0.065	0.069	0.073
F	11.40	11.50	11.60	0.449	0.453	0.457
D0	-	1.50	1.60	-	0.059	0.063
D1	-	1.50	1.60	-	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	15.90	16.00	16.10	0.626	0.630	0.634
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	10.80	10.90	11.00	0.425	0.429	0.433
B0	16.20	16.30	16.40	0.638	0.642	0.646
K0	4.80	4.90	5.00	0.189	0.193	0.197
t	0.35	0.40	0.45	0.014	0.016	0.018

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