

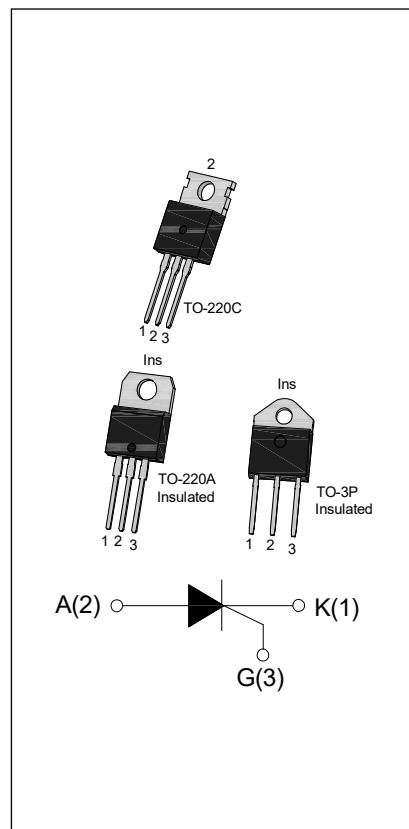


DESCRIPTION:

with high ability to withstand the shock loading of large current, JCT1630 SCRs provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. From all three terminals to external heatsink, JCT1630A and JCT1630Z provide a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906). Packages listed above are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	JCT1630
V _{DRM} / V _{RPM}	1600V
I _{T(RMS)}	30A
I _{GT}	≤40mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T _{stg}	-40-150	°C
Operating junction temperature range	T _j	-40-125	°C
Repetitive peak off-state voltage	V _{DRM}	1600	V
Repetitive peak reverse voltage	V _{RPM}	1600	V
RMS on-state current	TO-3P Ins (T _c =80°C)	30	A
	TO-220A(Ins) (T _c =70°C)		
	TO-220C (T _c =65°C)		
Non repetitive surge peak on-state current (t _p =10ms)	I _{TSM}	300	A
I ² t value for fusing (t _p =10ms)	I ² t	450	A ² s

Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	150	A/ μ s
Peak gate current	I_{GM}	5	A
Peak gate power	P_{GM}	10	W
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	1	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=30\Omega$	-	-	40	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM} T_j=125^\circ\text{C}$	0.25	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	150	mA
I_H	$I_T=1\text{A}$	-	-	100	mA
dV/dt	$V_D=2/3V_{DRM} T_j=125^\circ\text{C}$ Gate Open	-	-	1000	V/ μ s

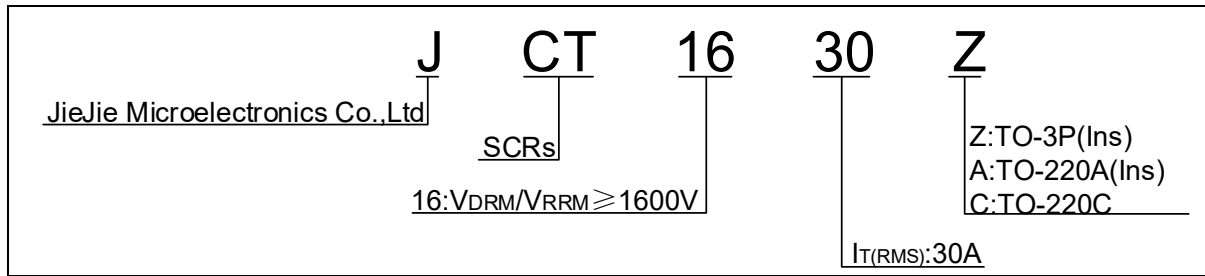
STATIC CHARACTERISTICS

Symbol	Parameter	Value(MAX)	Unit	
V_{TM}	$I_{TM}=60\text{A } t_p=380\mu\text{s}$	$T_C=25^\circ\text{C}$	1.8	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_C=25^\circ\text{C}$	10	μA
I_{RRM}		$T_C=125^\circ\text{C}$	6	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit	
$R_{th(j-c)}$	junction to case(DC)	TO-3P Ins	0.85	$^\circ\text{C/W}$
		TO-220A (Ins)	1.25	
		TO-220C	1.1	

ORDERING INFORMATION



MARKING

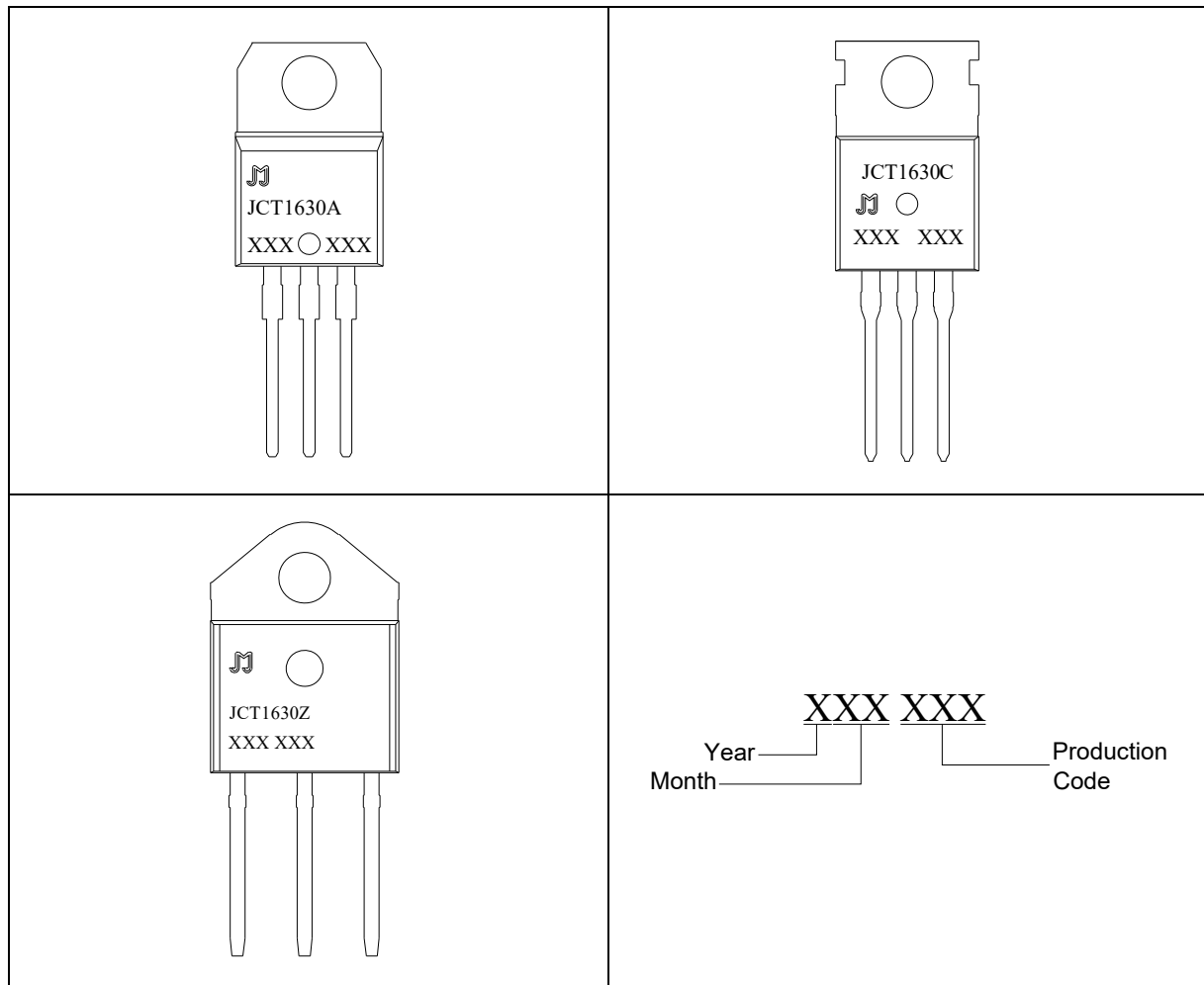


FIG.1 Maximum power dissipation versus RMS on-state current

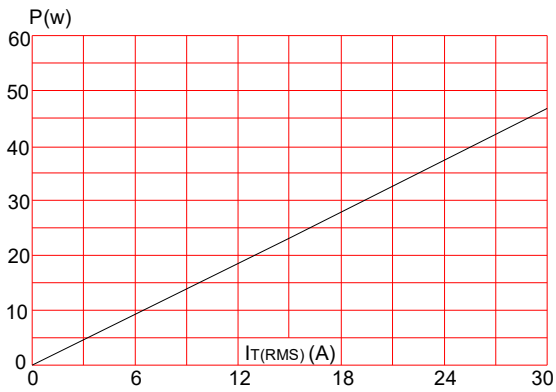


FIG.2 RMS on-state current versus case temperature

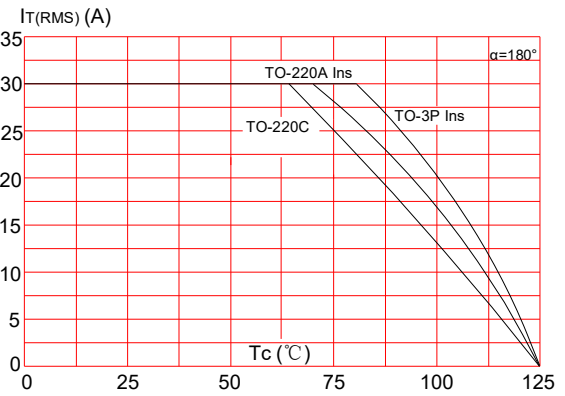


FIG.3 Surge peak on-state current versus number of cycles

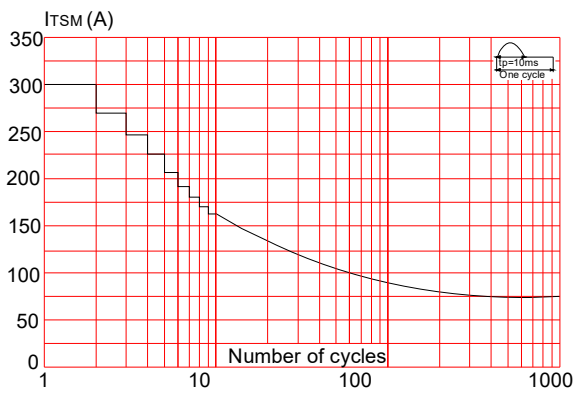


FIG.4 On-state characteristics (maximum values)

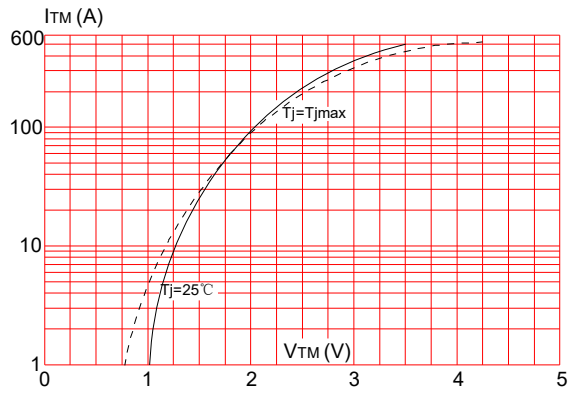


FIG.5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 150\text{A}/\mu\text{s}$)

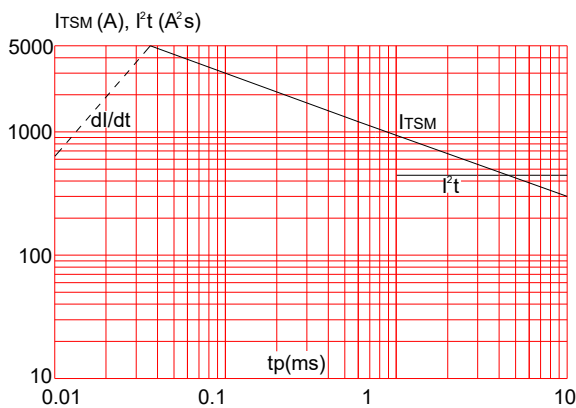
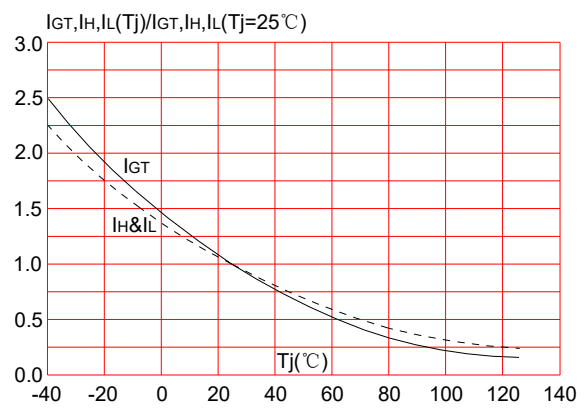


FIG.6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



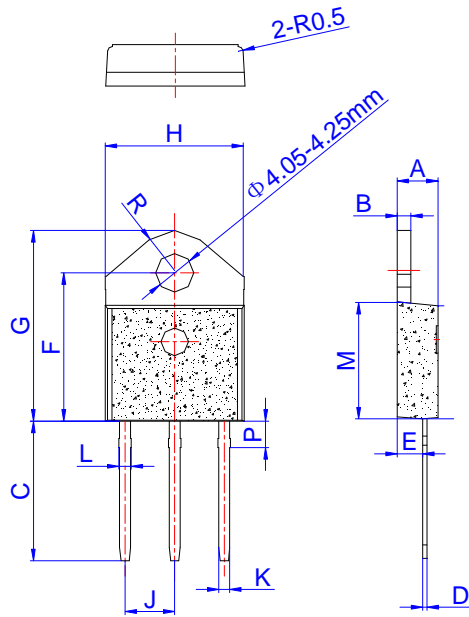
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1630A	1600	40	TO-220A(Ins)	50	Tube
JCT1630C			TO-220C		
JCT1630Z			TO-3P(Ins)	80	

Document Revision History

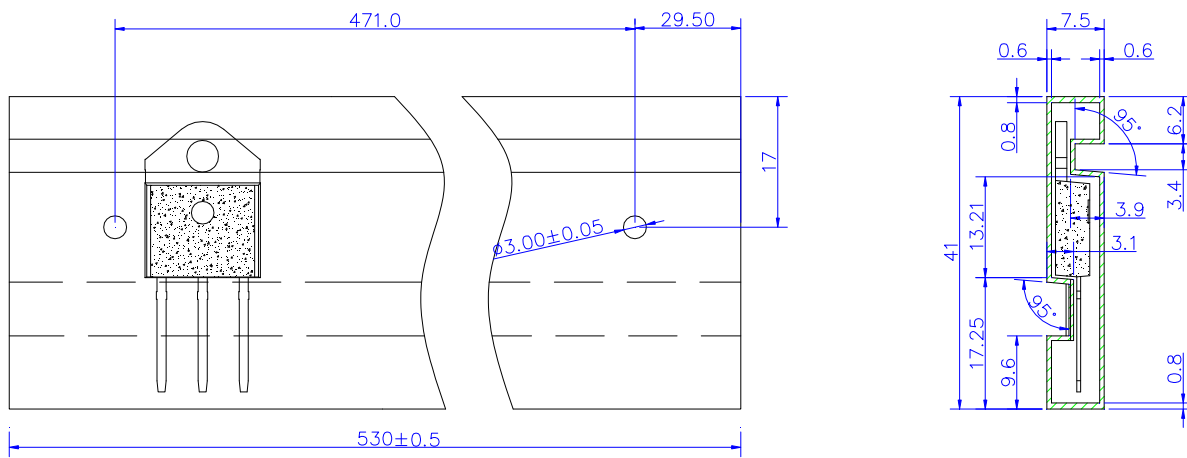
Date	Revision	Changes
Dec 5, 2019	3	Last update

PACKAGE MECHANICAL DATA



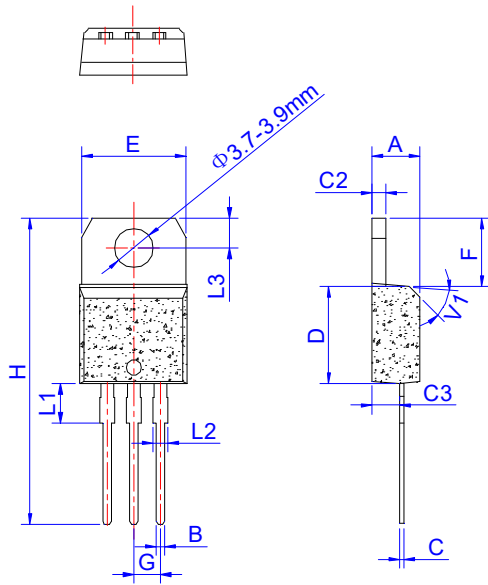
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	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



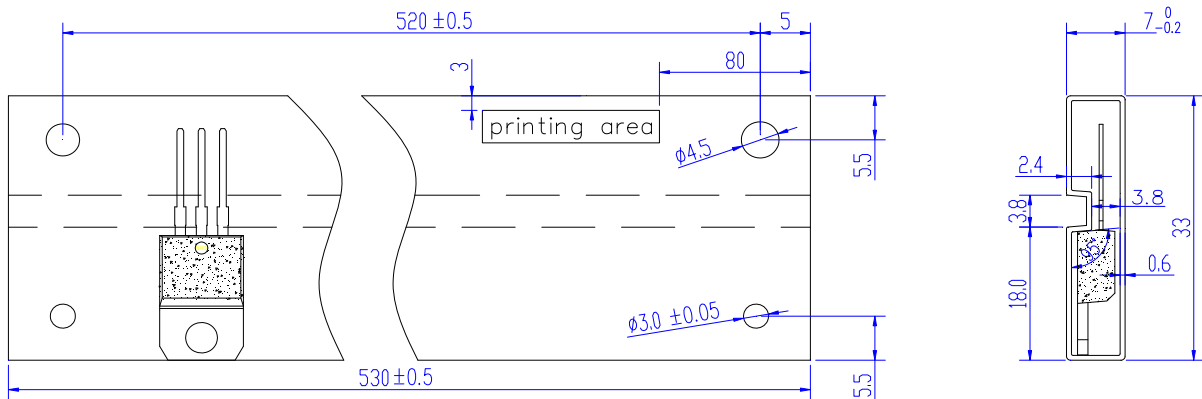
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-3P	TUBE	30	450	2,250

PACKAGE MECHANICAL DATA



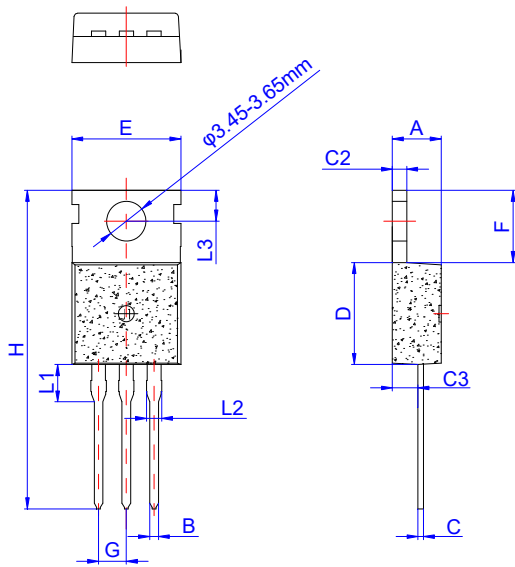
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.25		6.85	0.246		0.270
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	3.45		4.05	0.136		0.159
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

DELIVERY MODE



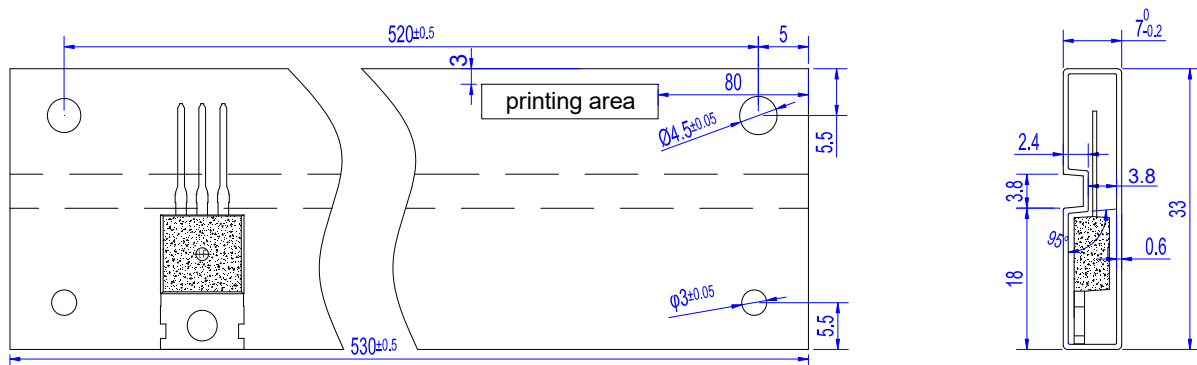
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.25		1.35	0.049		0.053
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000



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