

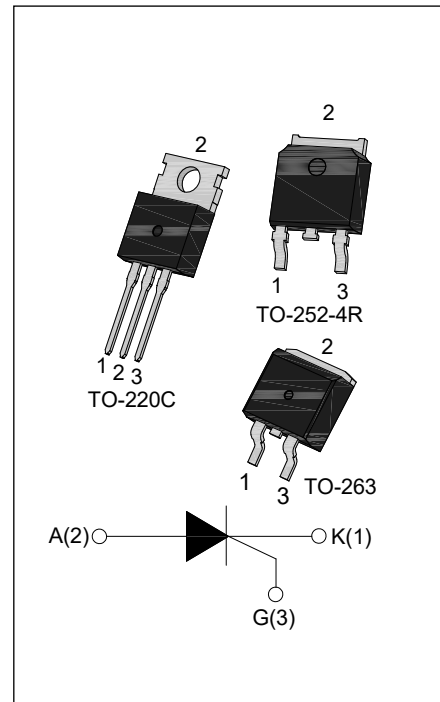


DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1208 SCRs provides high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on inverter. Complying with UL standards (File ref: E252906). All the packages mentioned are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
V_{DRM}/V_{RRM}	1200	V
$I_{T(RMS)}$	8	A
I_{GT}	≤ 15	mA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-125	$^{\circ}C$
Repetitive peak off-state voltage($T_j=25^{\circ}C$)		V_{DRM}	1200	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)		V_{RRM}	1200	V
RMS on-state current	TO-220C ($T_C=105^{\circ}C$)	$I_{T(RMS)}$	8	A
	TO-252-4R ($T_C=95^{\circ}C$)			
	TO-263 ($T_C=85^{\circ}C$)			
Non repetitive surge peak on-state current ($t_p=10ms$)		I_{TSM}	85	A
I^2t value for fusing ($t_p=10ms$)		I^2t	36	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)		dI/dt	100	$A/\mu s$

Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W
Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.8)	V_{PP}	0.95	kV

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	-	-	15	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM} T_j=125^{\circ}\text{C } R_L=3.3\text{K}\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	40	mA
I_H	$I_T=500\text{mA}$	-	-	30	mA
dv/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$	500	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=16\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.6	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	10	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220C	1.9	$^{\circ}\text{C/W}$
		TO-252-4R	2.9	
		TO-263	3.85	
$R_{th(j-a)}$	junction to ambient	TO-252-4R	70	
		TO-263	45	

ORDERING INFORMATION

<u>J</u>	<u>CT</u>	<u>12</u>	<u>08</u>	<u>C</u>	<u>-/</u>
JieJie Microelectronics Co.,Ltd	SCRs	12: $V_{DRM}/V_{RRM} \geq 1200V$	$I_T(RMS): 8A$	C: TO-220C E: TO-263 K: TO-252-4R	Blank: Tube TR: Tape & Reel

MARKING

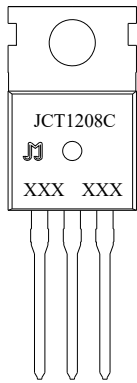
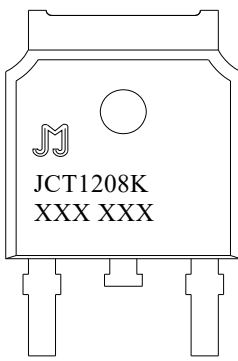
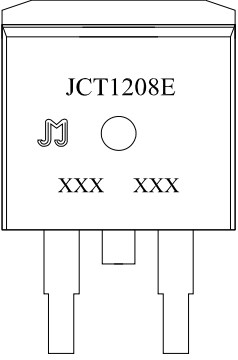
 JCT1208C J XXX XXX	 JCT1208K J XXX XXX
 JCT1208E J XXX XXX	XXX XXX Year Month Production Code

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

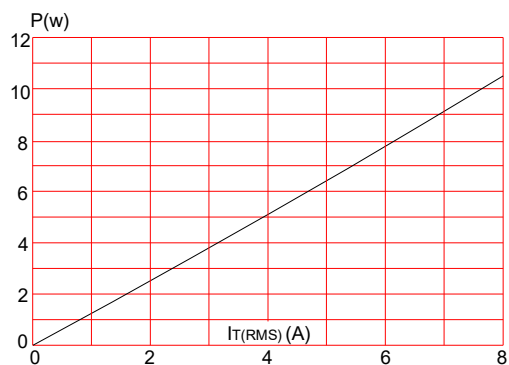


FIG.3: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35 μ m)(full cycle)

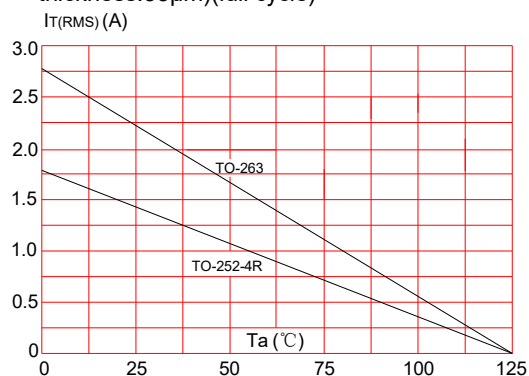


FIG.5: On-state characteristics (maximum values)

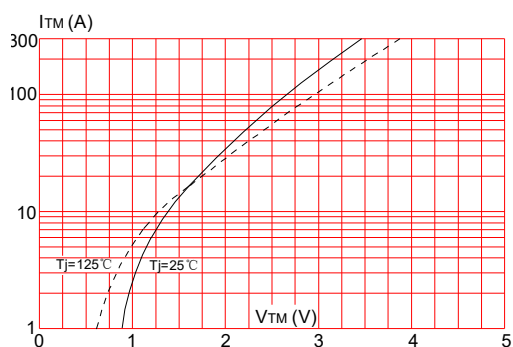


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

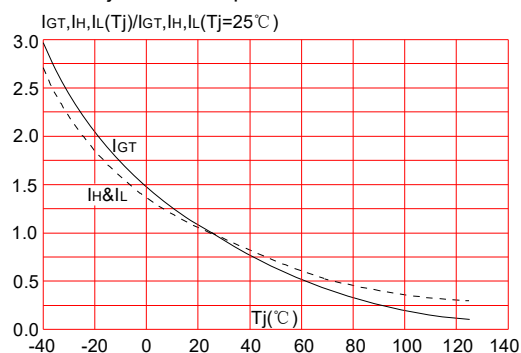


FIG.2: RMS on-state current versus case temperature

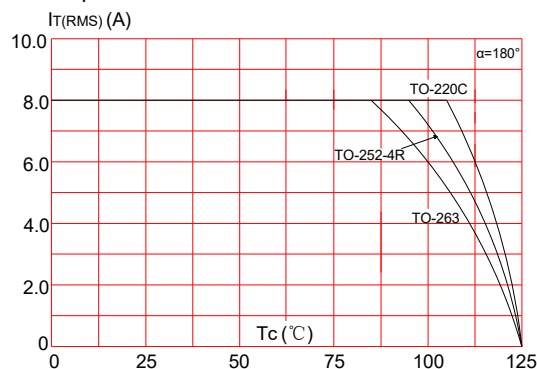


FIG.4: Surge peak on-state current versus number of cycles

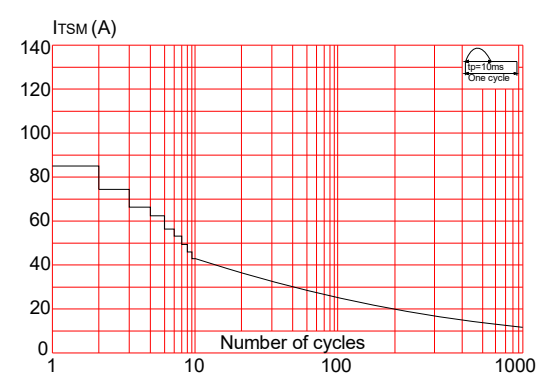


FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

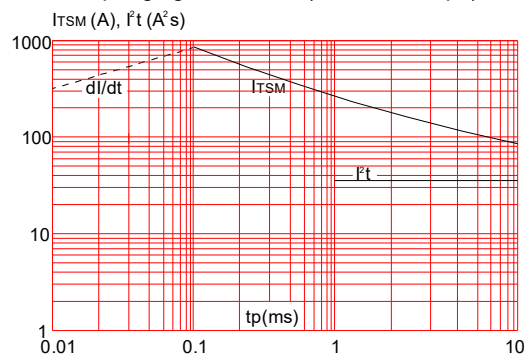
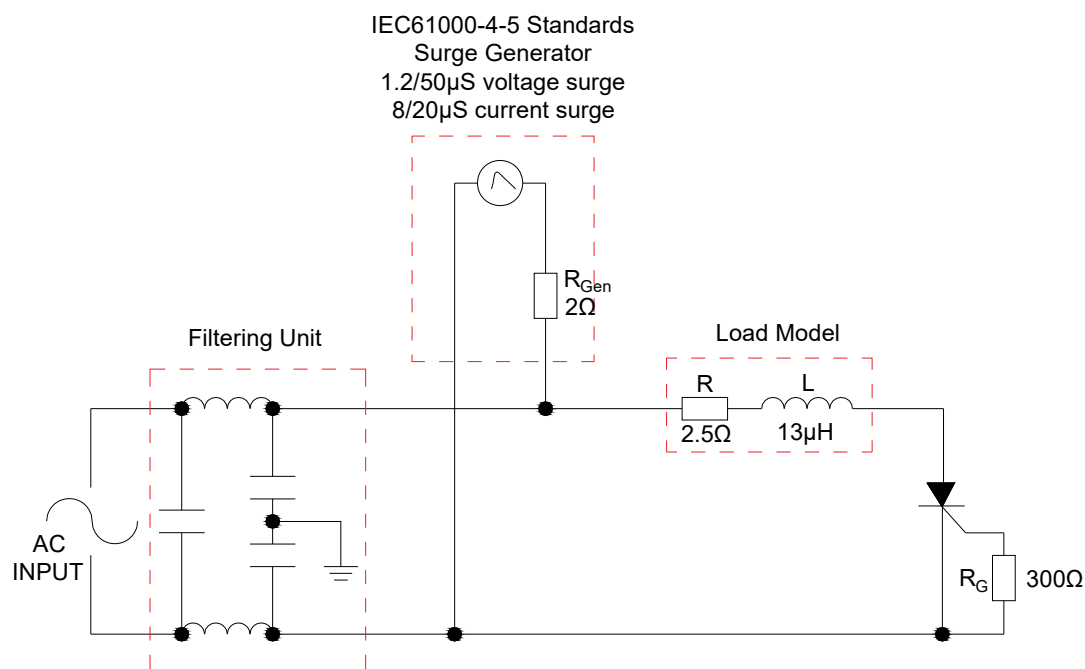


FIG.8: Overvoltage ruggedness test circuit for resistive and inductive loads for IEC 61000-4-5 standards.



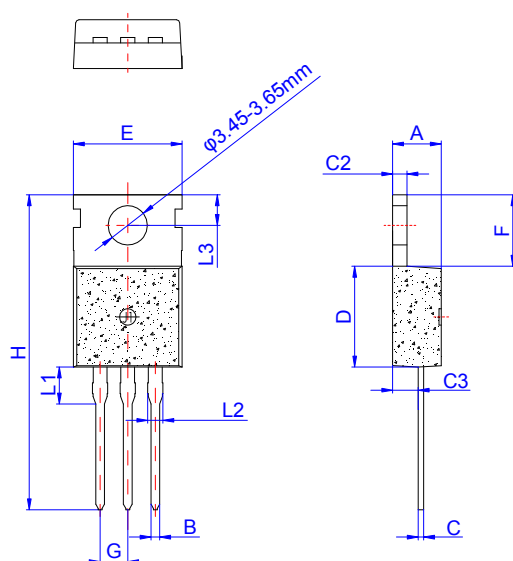
ORDERING INFORMATION

Order code	Voltage V _{DRM} /V _{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1208C	1200	15	TO-220C	50	Tube
JCT1208K			TO-252-4R	80	Tube
				2,500	Tape & Reel
JCT1208E			TO-263	50	Tube
				800	Tape & Reel

Document Revision History

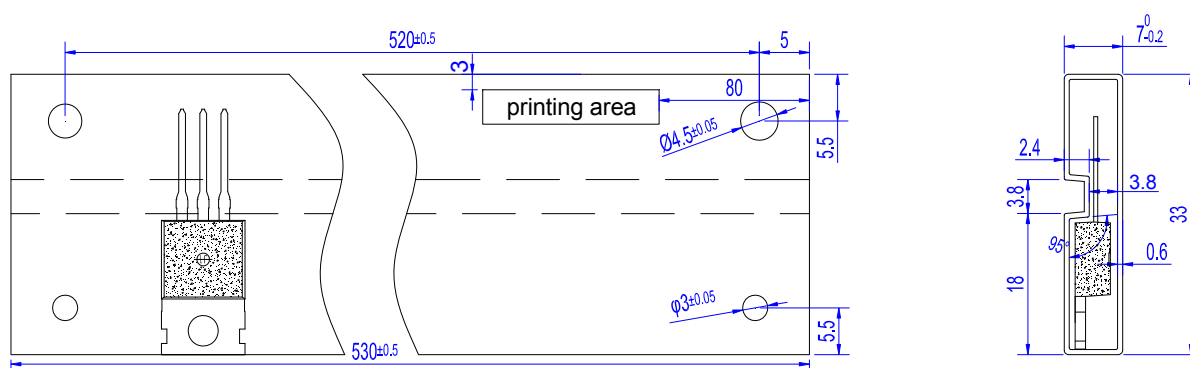
Date	Revision	Changes
Mar 31, 2022	1	Last update

PACKAGE MECHANICAL DATA



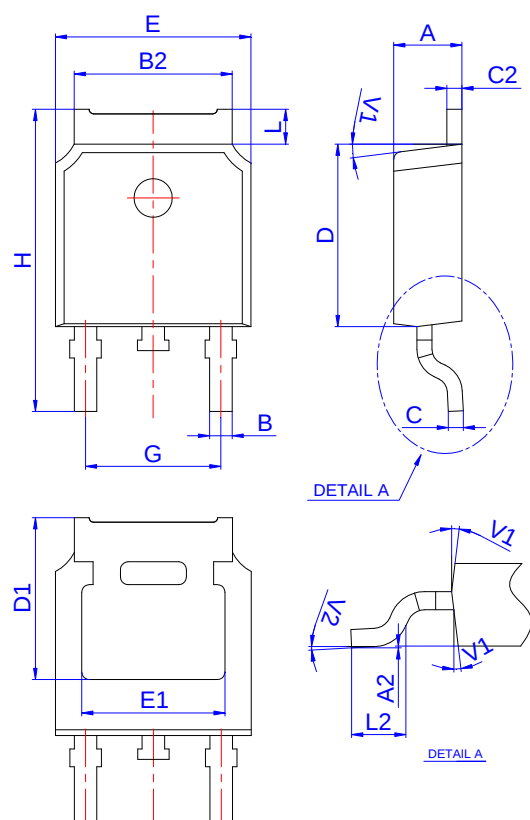
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



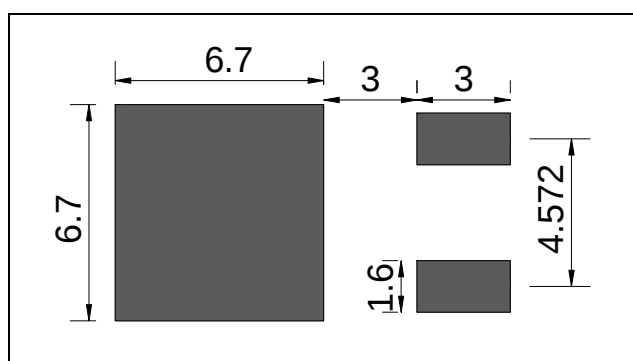
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA

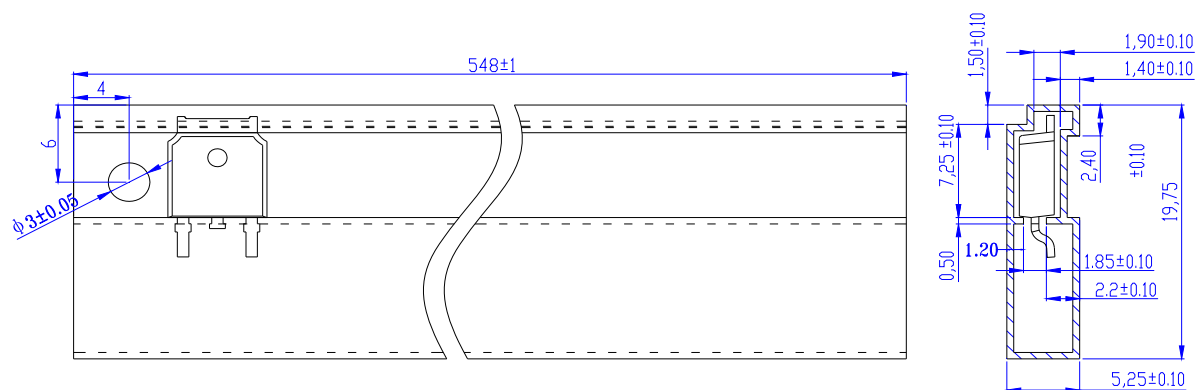


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

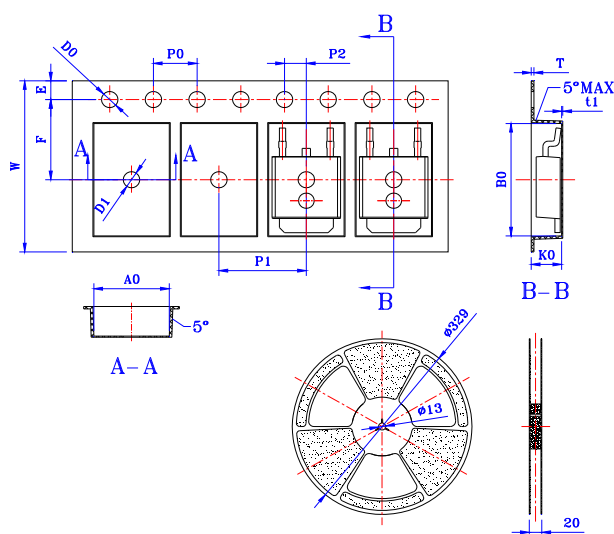
FOOTPRINT-TO-252-4R (dimensions in mm)



DELIVERY MODE



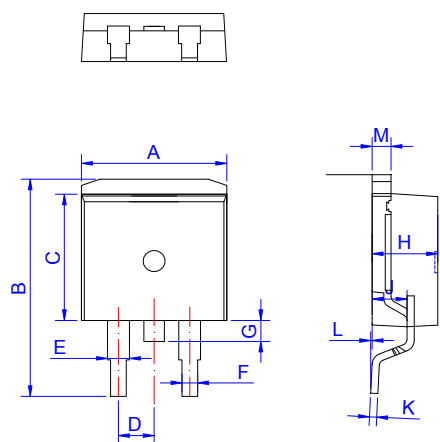
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-252-4R	TUBE	80	4,000	20,000



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	15.90	16.00	16.10	0.626	0.630	0.634
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
D0	1.40	1.50	1.60	0.055	0.059	0.063
D1	1.40	1.50	1.60	0.055	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
10P0	39.80	40.00	40.20	1.567	1.575	1.583
A0	6.85	6.90	7.00	0.270	0.272	0.276
B0	10.45	10.50	10.60	0.411	0.413	0.417
K0	2.68	2.78	2.88	0.106	0.109	0.113
T	0.24	—	0.27	0.009	—	0.011
t1	0.10	—	—	0.004	—	—

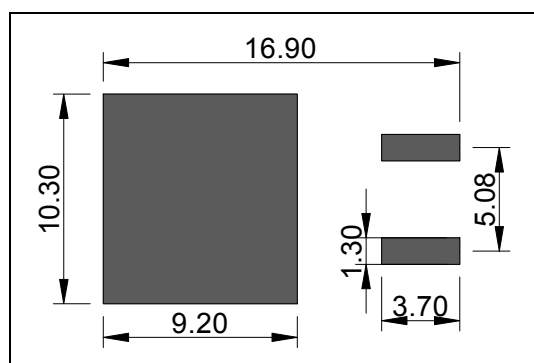
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-252-4R	TAPING	2,500	25,000	13 inch

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	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
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

FOOTPRINT-TO-263 (dimensions in mm)



Technical drawing of a mechanical part, likely a bracket or support, showing dimensions in millimeters (mm). The drawing includes a top view and a side view.

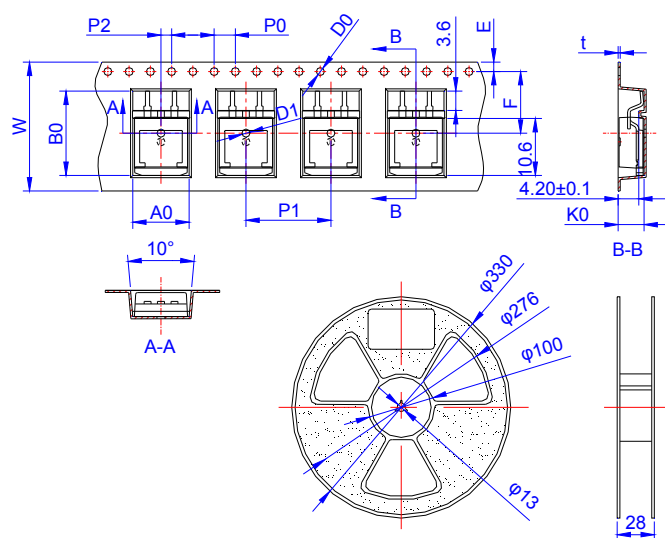
Top View Dimensions:

- Overall width: 530 ± 0.5
- Distance from left edge to center of mounting hole: 518
- Distance from right edge to center of mounting hole: 12.9
- Mounting hole diameter: $\varnothing 3.0$
- Mounting hole position tolerance: ± 0.05

Side View Dimensions:

- Overall height: $7^{+0}_{-0.2}$
- Distance from top edge to mounting hole center: 1.5
- Distance from mounting hole center to bottom edge: 10^{AS}
- Distance from bottom edge to mounting hole center: 17^{AS}
- Distance from mounting hole center to right edge: 2.6
- Distance from right edge to mounting hole center: 0.6
- Distance from right edge to mounting hole center: 1.5
- Distance from right edge to mounting hole center: 33

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

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch



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