

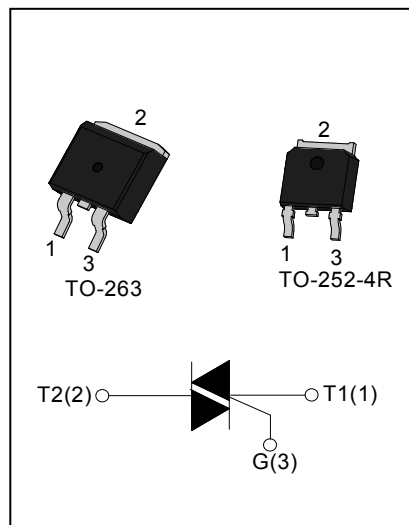


DESCRIPTION:

With low holding and latching current, JST136 series triacs are especially recommended for use on middle and small resistance type power load. Packages TO-263 & TO-252-4R are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600/800	V



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($T_j=25^{\circ}C$)	V_{DRM}	600/800	V	
Repetitive peak reverse voltage($T_j=25^{\circ}C$)	V_{RRM}	600/800	V	
RMS on-state current	$I_{T(RMS)}$	TO-252-4R ($T_C=105^{\circ}C$)	4	A
		TO-263 ($T_C=100^{\circ}C$)		
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	35	A	
I^2t value for fusing ($t_p=10ms$)	I^2t	6.1	A^2s	
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	I - II - III	50	$A/\mu s$
		IV	10	
Peak gate current	I_{GM}	2	A	
Average gate power dissipation	$P_{G(AV)}$	0.5	W	
Peak gate power	P_{GM}	5	W	

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

Symbol	Test Condition	Quadrant		Value				Unit
				T	D	E	F	
I_{GT}	$V_D=12\text{V } R_L=30\Omega$	I - II - III	MAX	5	5	10	25	mA
		IV		5	10	25	70	
V_{GT}		ALL	MAX	1.3				V
V_{GD}	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2				V
I_L	$I_G=1.2I_{GT}$	I - III	MAX	10	20	30	40	mA
		II - IV		15	35	45	60	
I_H	$I_T=100\text{mA}$		MAX	5	15	25	30	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	20	50	100	150	V/ μs
(dV/dt) _c	(dI/dt) _c =1.7A/ms $T_j=125^{\circ}\text{C}$		MIN	0.1	0.1	0.5	5	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=5.5\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.6	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.94	V
R_d	Dynamic resistance	$T_j=125^{\circ}\text{C}$	105	m Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252-4R	2.8	$^{\circ}\text{C}/\text{W}$
		TO-263	3.8	
$R_{th(j-a)}$	junction to ambient	TO-252-4R	70	$^{\circ}\text{C}/\text{W}$
		TO-263	45	

ORDERING INFORMATION

J	ST	136	K	-800	E	-/
JieJie Microelectronics Co.,Ltd	TRIACs	$I_T(RMS):4A$	E:TO-263 K:TO-252-4R	600:V _{DRM} /V _{RRM} ≥600V 800:V _{DRM} /V _{RRM} ≥800V		Blank: Tube TR: Tape & Reel
				T:I _{GT1-3} ≤5mA I _{GT4} ≤5mA D:I _{GT1-3} ≤5mA I _{GT4} ≤10mA E:I _{GT1-3} ≤10mA I _{GT4} ≤25mA F:I _{GT1-3} ≤25mA I _{GT4} ≤70mA		

MARKING

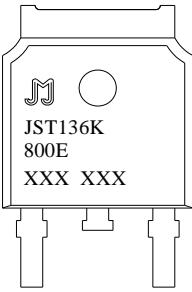

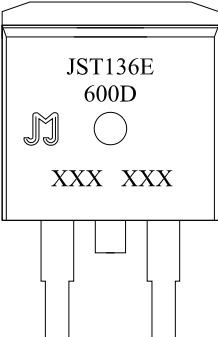

 <p style="text-align: center;">  JST136K 800E XXX XXX </p>	 <p style="text-align: center;"> JST136E 600D  XXX XXX </p>
<p style="font-size: 1.2em; font-weight: bold; margin: 0;">XXX XXX</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>Year</p> <p>Month</p> </div> <div style="text-align: center;"> <p>Production Code</p> </div> </div>	

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

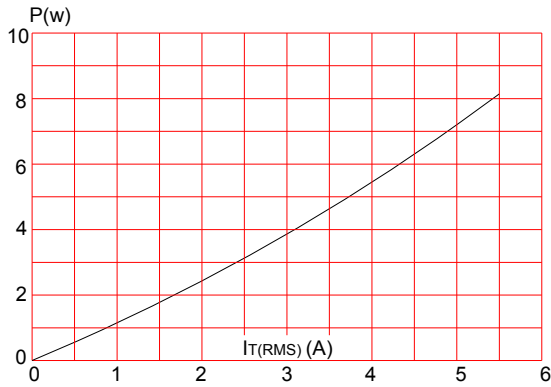


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm)

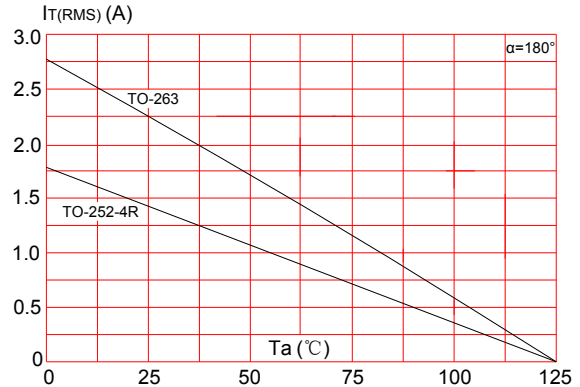


FIG.3: RMS on-state current versus case temperature

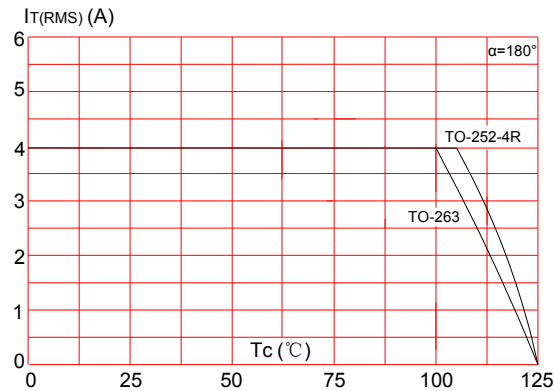


FIG.4: Surge peak on-state current versus number of cycles

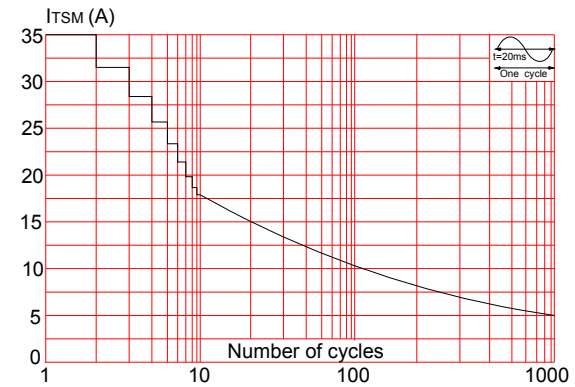


FIG.5: On-state characteristics (maximum values)

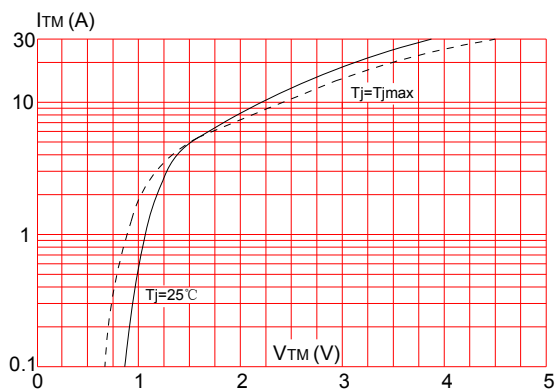


FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I_t (I - II - III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

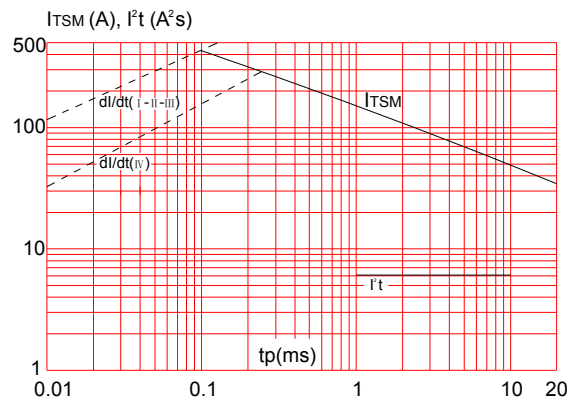


FIG.7: Relative variations of gate trigger current versus junction temperature

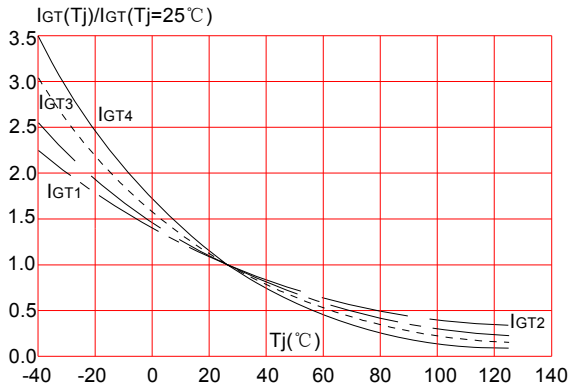


FIG.8: Relative variations of holding current versus junction temperature

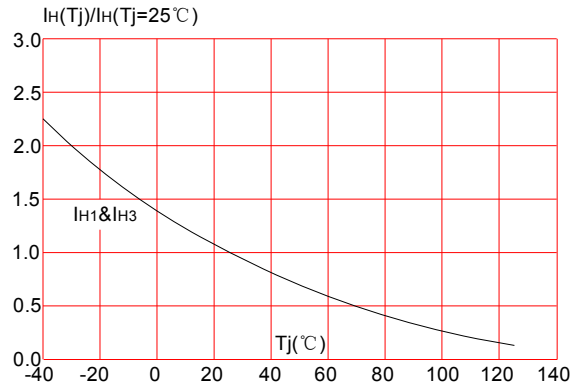
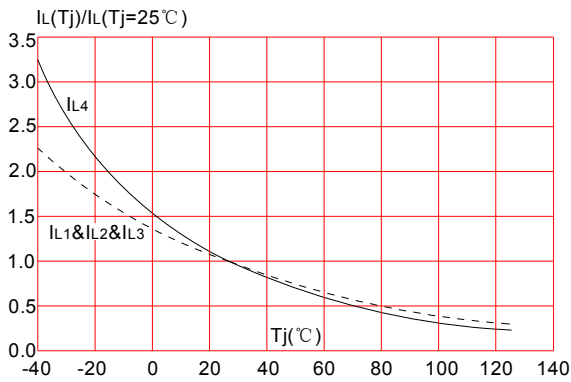
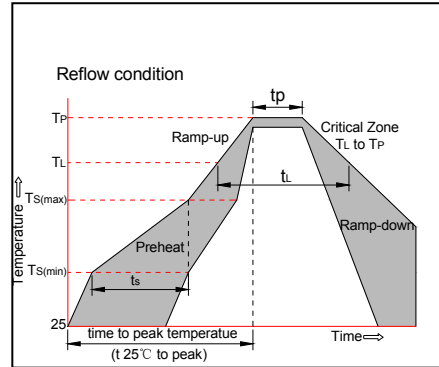


FIG.9: Relative variations of latching current versus junction temperature



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



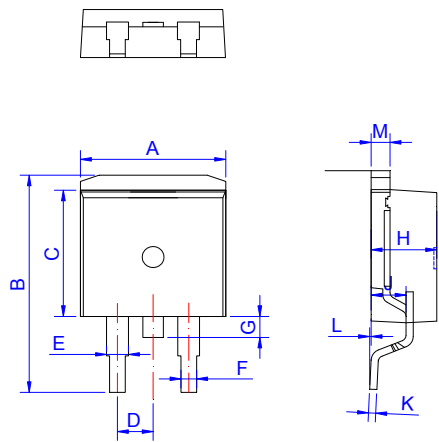
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III	IV			
JST136K-600/800T	600/800	5	5	TO-252-4R	80 2,500	Tube Tape & Reel
JST136K-600/800D		5	10			
JST136K-600/800E		10	25			
JST136K-600/800F		25	70			
JST136E-600/800T		5	5	TO-263	50 800	Tube Tape & Reel
JST136E-600/800D		5	10			
JST136E-600/800E		10	25			
JST136E-600/800F		25	70			

Document Revision History

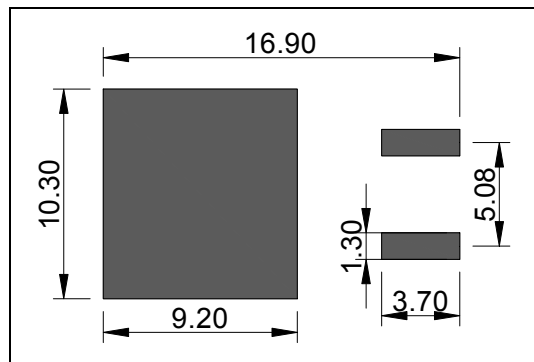
Date	Revision	Changes
Feb 23, 2018	12	Last update
Dec 29, 2021	13	Add Vto & Rd

PACKAGE MECHANICAL DATA

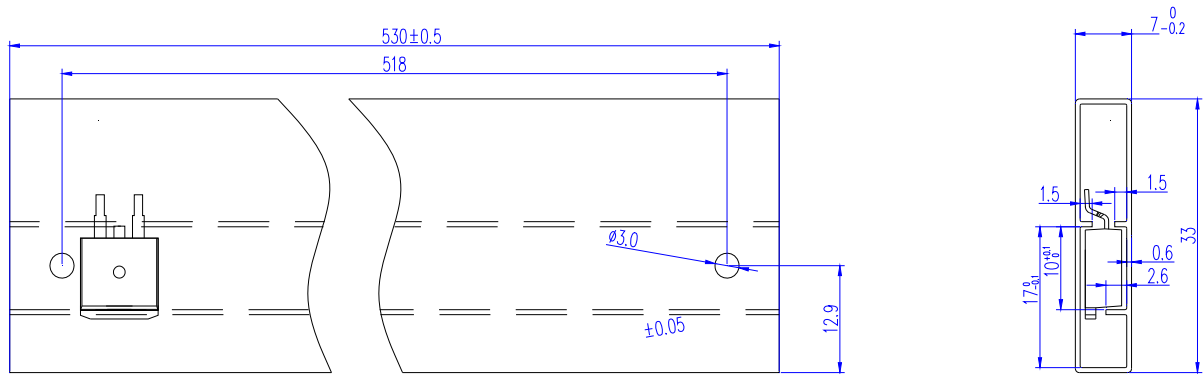


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053

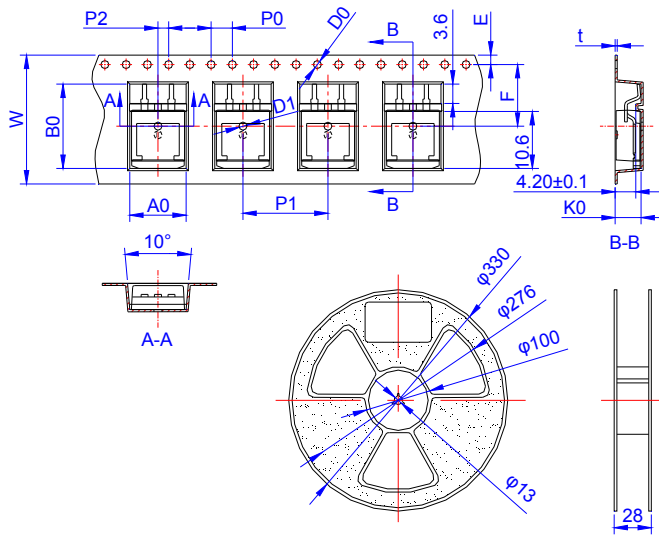
FOOTPRINT-TO-263 (dimensions in mm)



DELIVERY MODE



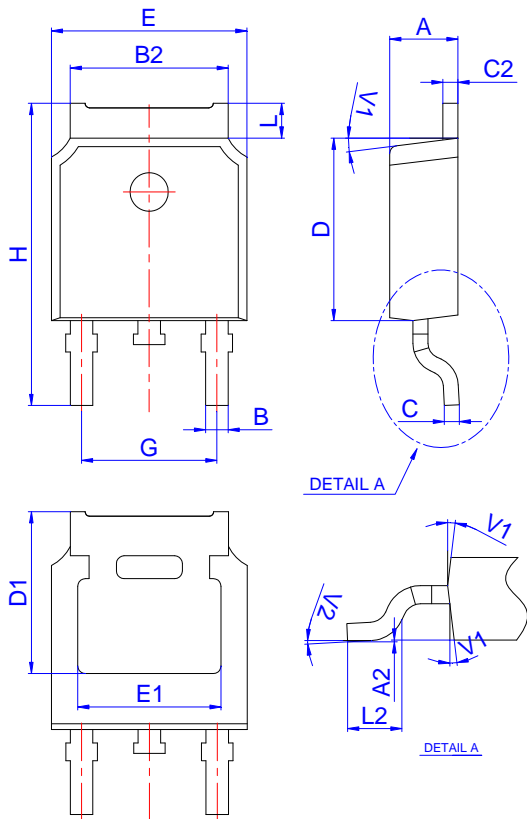
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	5,000



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

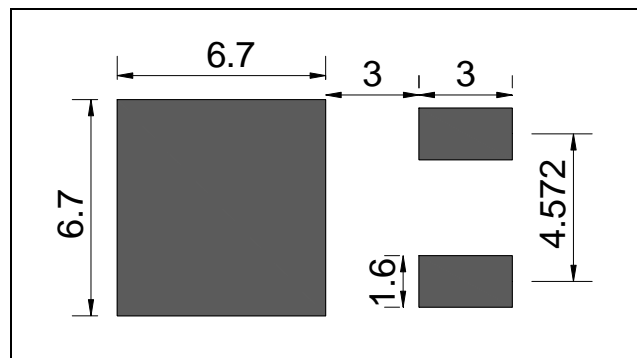
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch

PACKAGE MECHANICAL DATA

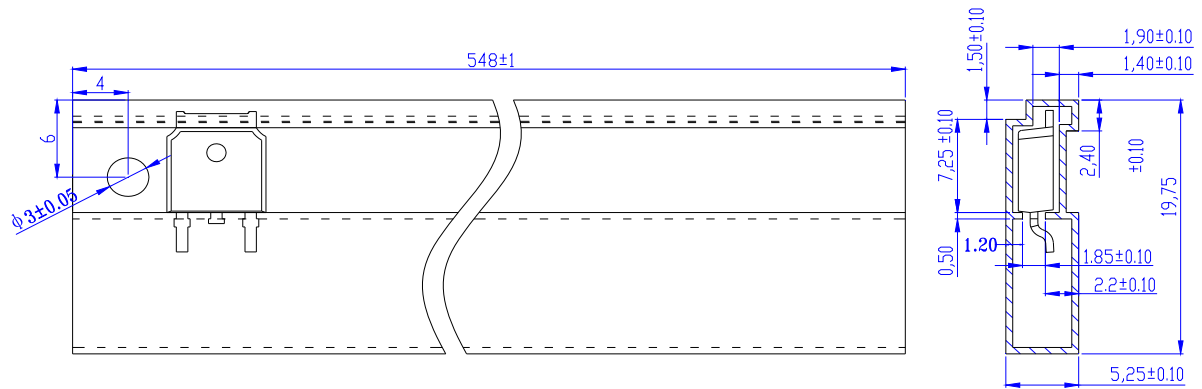


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
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°

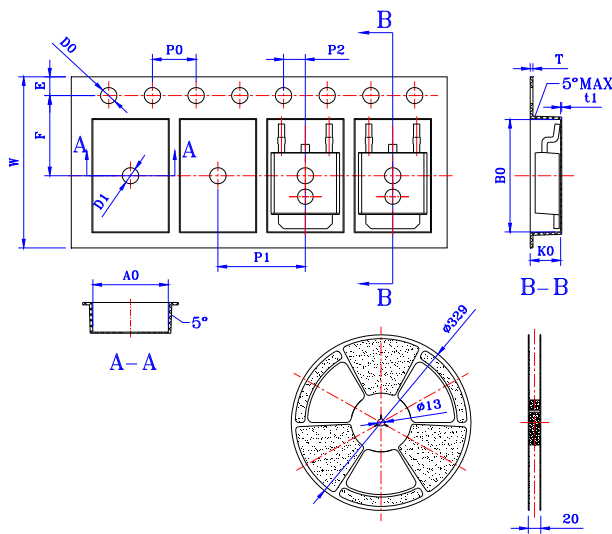
FOOTPRINT-TO-252-4R (dimensions in mm)



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
ti	0.10	-	-	0.004	-	-

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



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