

WPM2341

P-Channel Enhancement Mode Mosfet

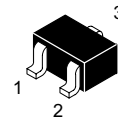
[Http://www.sh-willsemi.com](http://www.sh-willsemi.com)

Features

- Higher Efficiency Extending Battery Life
- Miniature SOT23-3 Surface Mount Package
- Super high density cell design for extremely low RDS (ON)

Applications

- DC/DC Converter
- Load Switch
- Battery Powered System
- LCD Display inverter
- Power Management in Portable, Battery Powered Products

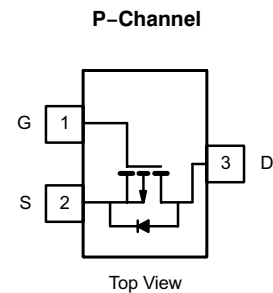


SOT 23-3

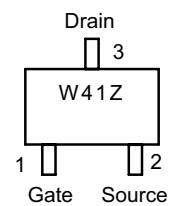
pin connections :

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted					
Parameter	Symbol	5 s	Steady State	Unit	
Drain-Source Voltage	V_{DS}	-20		V	
Gate-Source Voltage	V_{GS}	± 8		V	
Continuous Drain Current ($T_J = 150\text{ }^\circ\text{C}$) ^a	I_D	$T_A=25\text{ }^\circ\text{C}$	-4.3	-3.5	A
		$T_A=80\text{ }^\circ\text{C}$	-3.2	-2.5	
Pulsed Drain Current	I_{DM}	-20		A	
Continuous Source Current (Diode Conduction) ^a	I_S	-1.7	-1	A	
Maximum Power Dissipation ^a	P_D	$T_A=25\text{ }^\circ\text{C}$	1.25	0.75	W
		$T_A=80\text{ }^\circ\text{C}$	0.7	0.42	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to 150		$^\circ\text{C}$	

a. Surface Mounted on FR4 Board using 1 in sq pad size, 2oz Cu.



Marking:



W 41= Specific Device Code
Z = Date Code

Order information

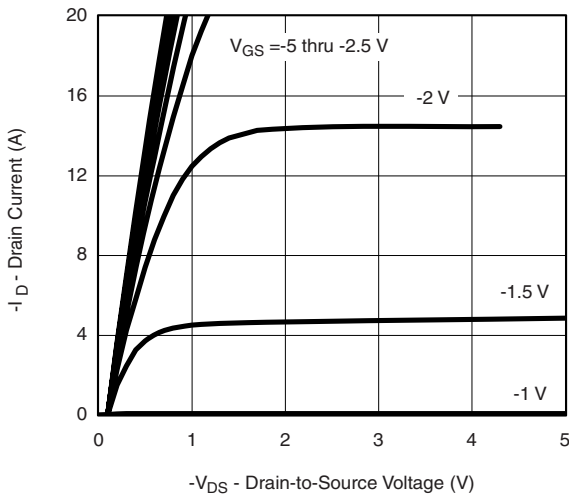
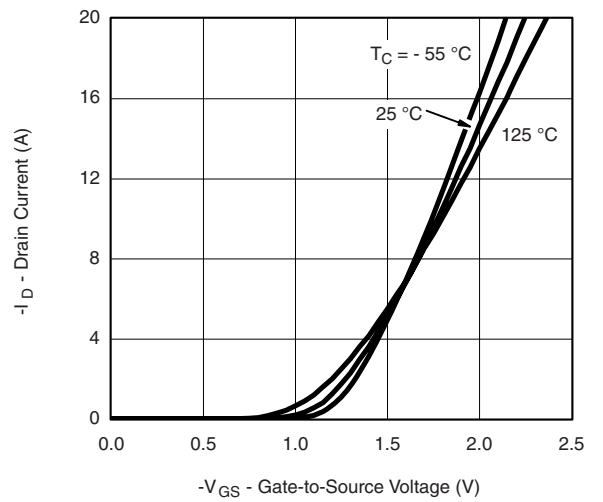
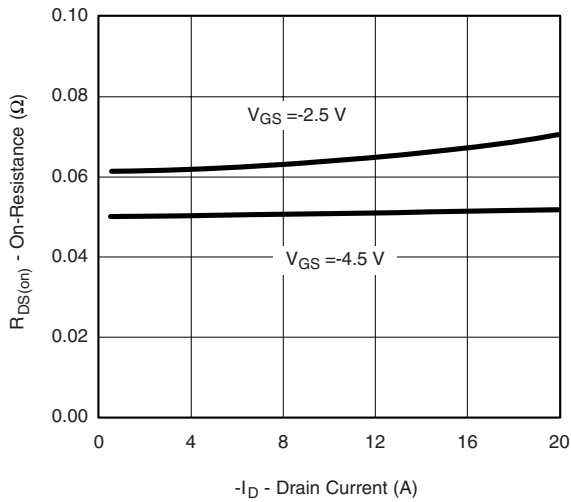
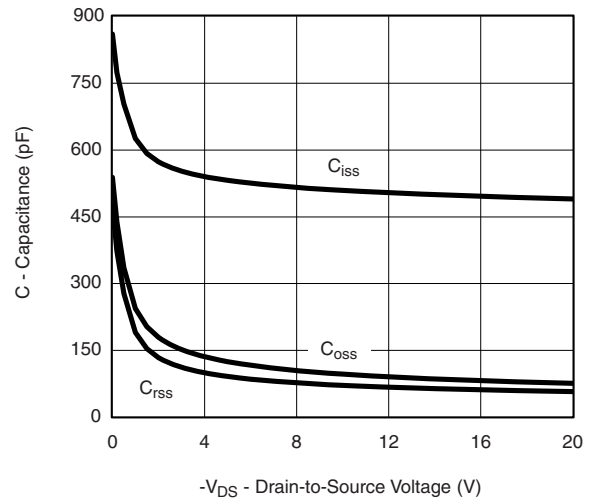
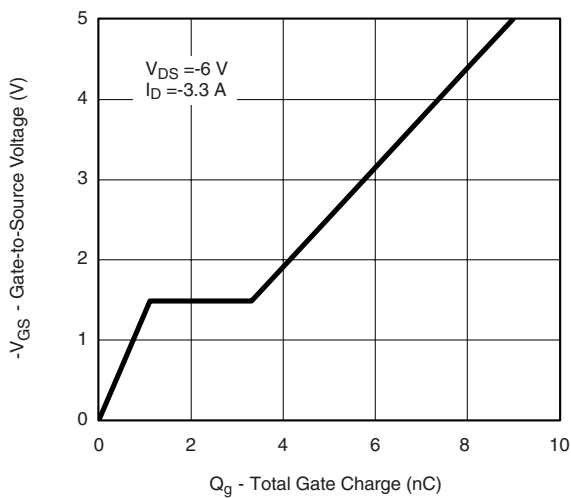
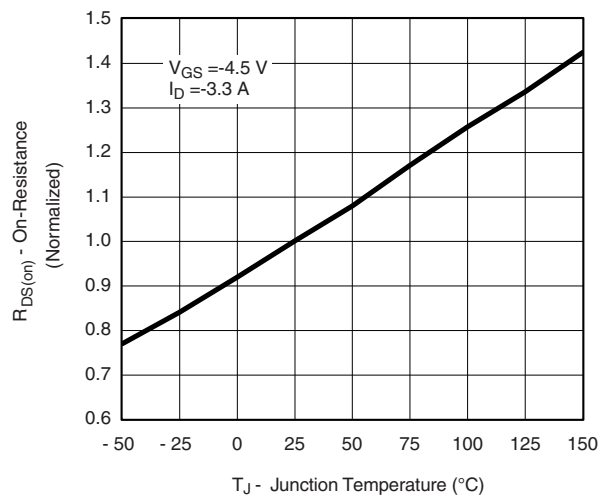
Part Number	Package	Shipping
WPM2341-3/TR	SOT23-3	3000 Tape & Reel

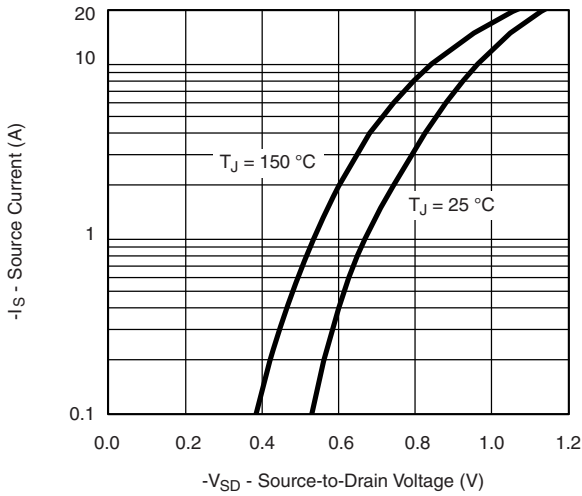
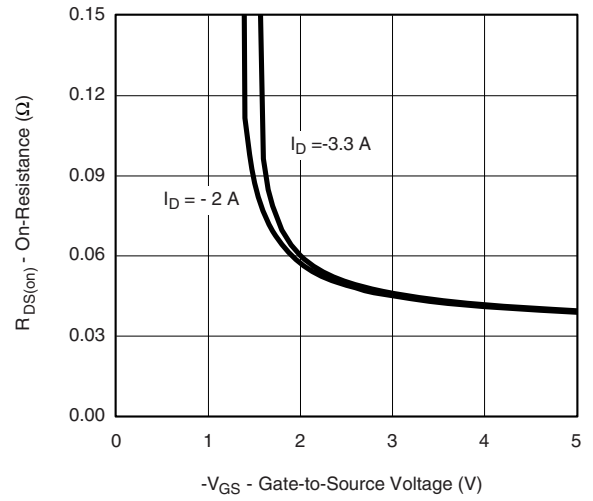
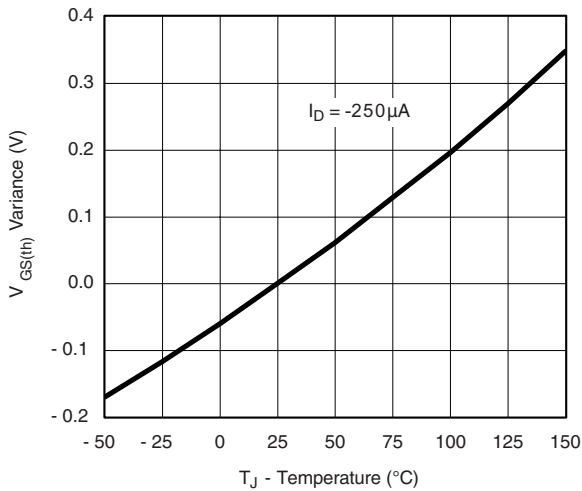
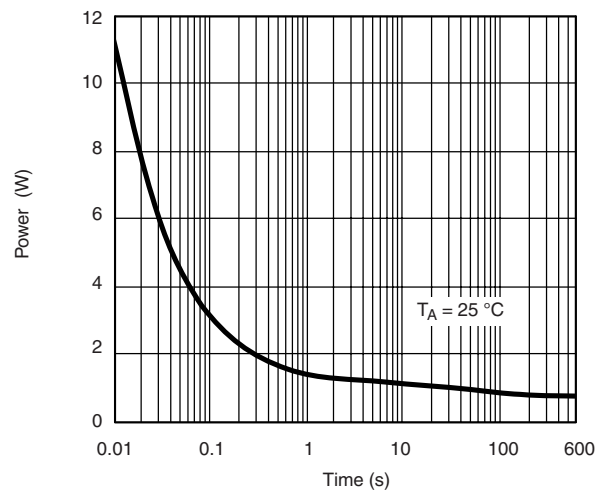
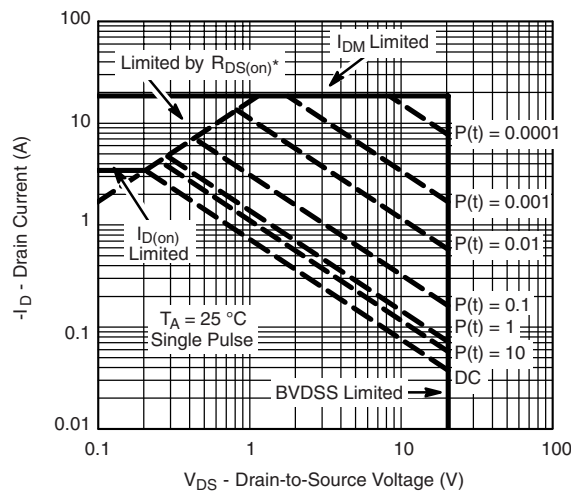
THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^b	t ≤ 5 s	R _{θJA}	75	100	°C/W
	Steady State		125	165	

b. Surface Mounted on FR4 Board using 1 in sq pad size, 2oz Cu.

MOSFET ELECTRICAL CHARACTERISTICS(T_J =25 °C unless otherwise specified)

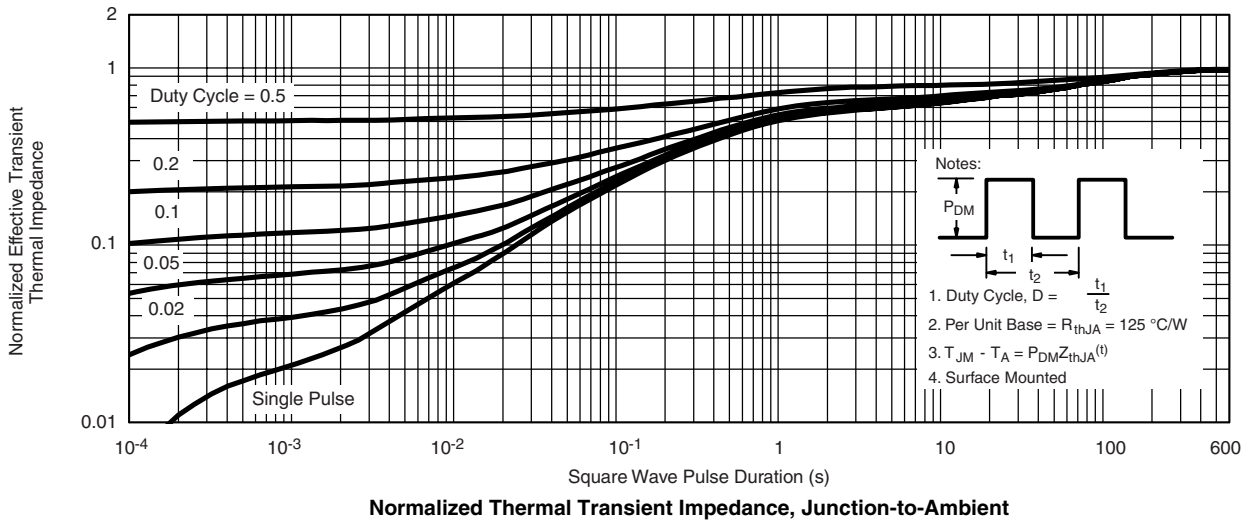
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16V, V _{GS} = 0V			-1	μA
Gate -Source leakage current	I _{GSS}	V _{GS} = ±8 V, V _{DS} = 0V			±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = -250μA	-035	-063	-1.00	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.3A		52	61	mΩ
		V _{GS} = -2.5V, I _D = -2.8 A		65	71	mΩ
Forward Transconductance	g _{FS}	V _{DS} = -5 V, I _D = -3.3A		3.0		S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -6 V, V _{GS} = 0V, f = 1.0 MHz			700	pF
Output Capacitance	C _{oss}				160	pF
Reverse Transfer Capacitance	C _{rss}				120	pF
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{GS} = -4.5V, V _{DD} = -6 V, I _D = -1.0A, R _G = 6.0Ω,			25	ns
Turn-On Rise Time	t _r				55	ns
Turn-Off Delay Time	t _{d(off)}				90	ns
Turn-Off Fall Time	t _f				60	ns
Total Gate Charge	Q _{G(TOT)}	V _{DS} = -6 V, I _D = -3.3A, V _{GS} = -4.5V		8	13	nC
Threshold gate charge	Q _{G(TH)}			0.2		nC
Gate-Source Charge	Q _{GS}			1.2		nC
Gate-Drain Charge	Q _{GD}			2.2		nC
Drain-Source Diode Characteristics and Maximun Ratings						
Forward Diode Voltage	V _{SD}	V _{GS} = 0V, I _S = -1.6A		-0.8		V

Typical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Output Characteristics

Transfer Characteristics

On-Resistance vs. Drain Current

Capacitance

Gate Charge

On-Resistance vs. Junction Temperature

Typical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Source-Drain Diode Forward Voltage

On-Resistance vs. Gate-to-Source Voltage

Threshold Voltage

Single Pulse Power


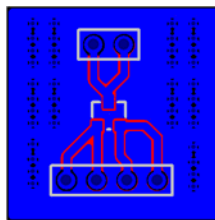
* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area

Typical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)


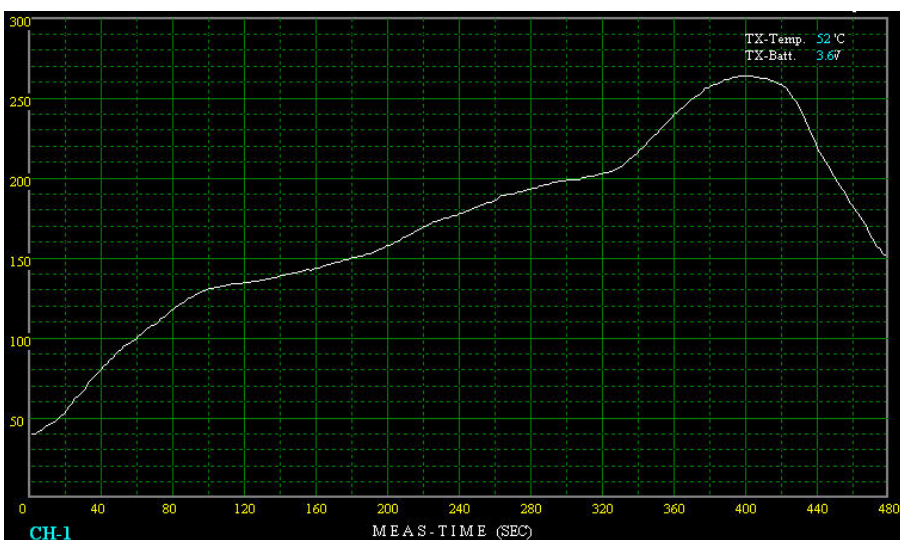
Power Dissipation Characteristics

1. The package of WPM2341 is SOT23-3, surface mounted on FR4 Board using 1 in sq pad size, 2 oz Cu, $R_{\theta JA}$ is 125 °C/W.
2. The power dissipation P_D is based on $T_{J(MAX)}=150^{\circ}C$, and the relation between T_J and P_D is $T_J = T_a + R_{\theta JA} * P_D$, the maximum power dissipation is determined by $R_{\theta JA}$.
3. The $R_{\theta JA}$ is the thermal impedance from junction to ambient, using larger PCB pad size can get smaller $R_{\theta JA}$ and result in larger maximum power dissipation.



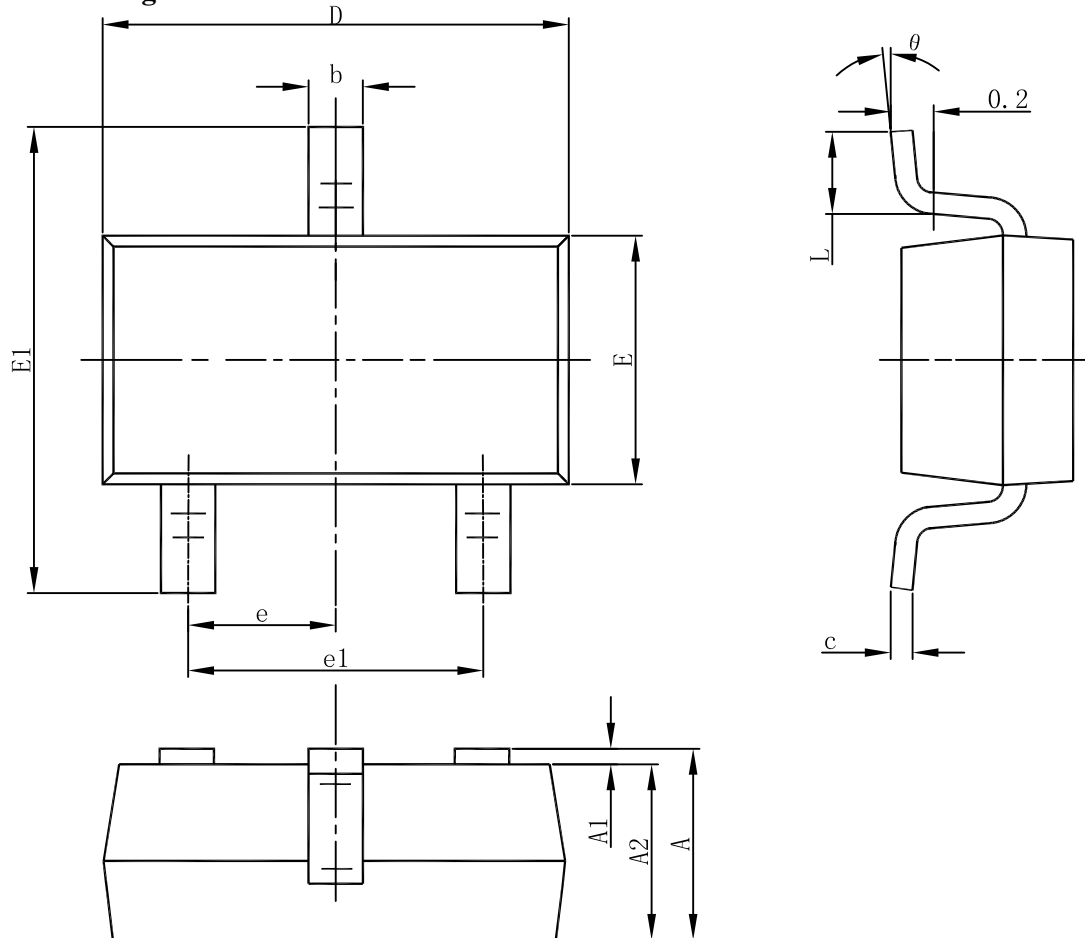
125 °C/W when mounted on
a 1 in² pad of 2 oz copper.

Welding temperature curve

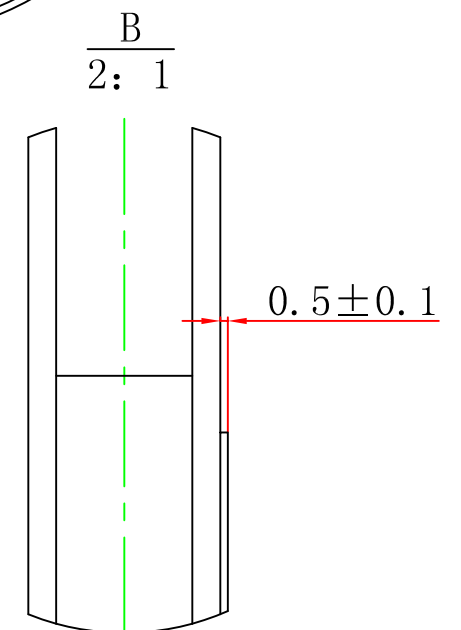
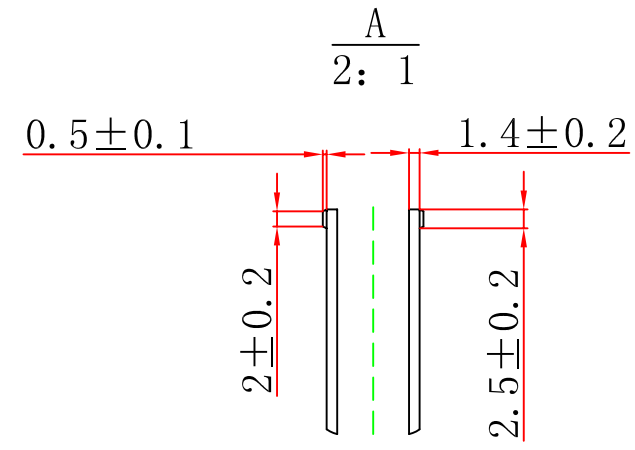
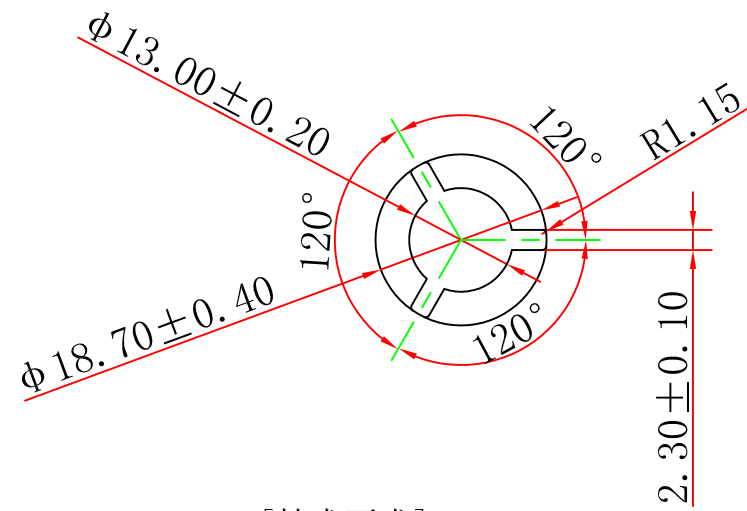
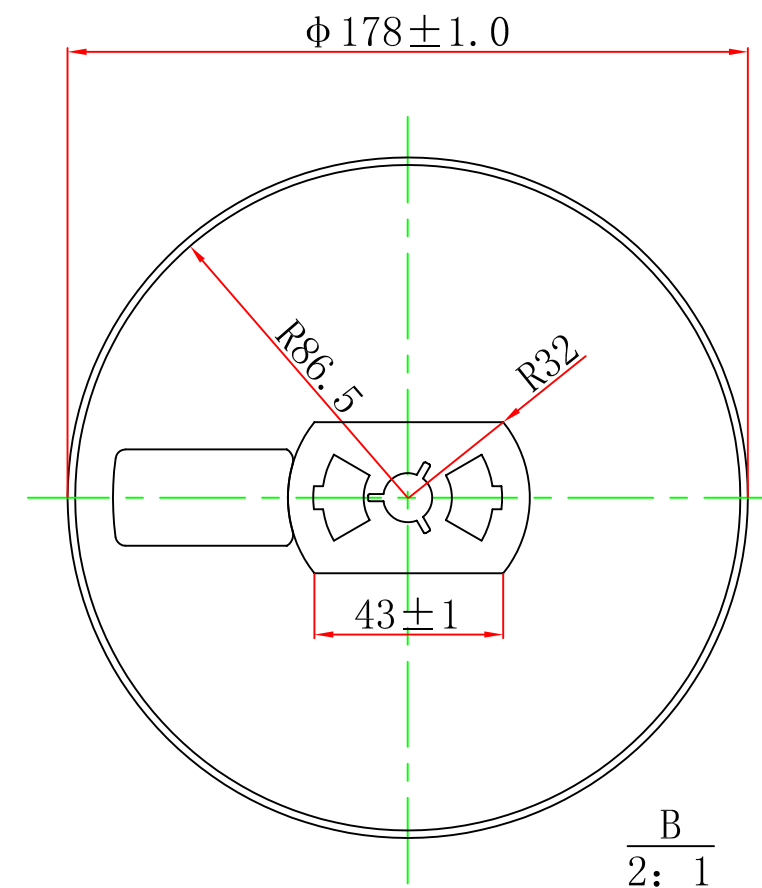
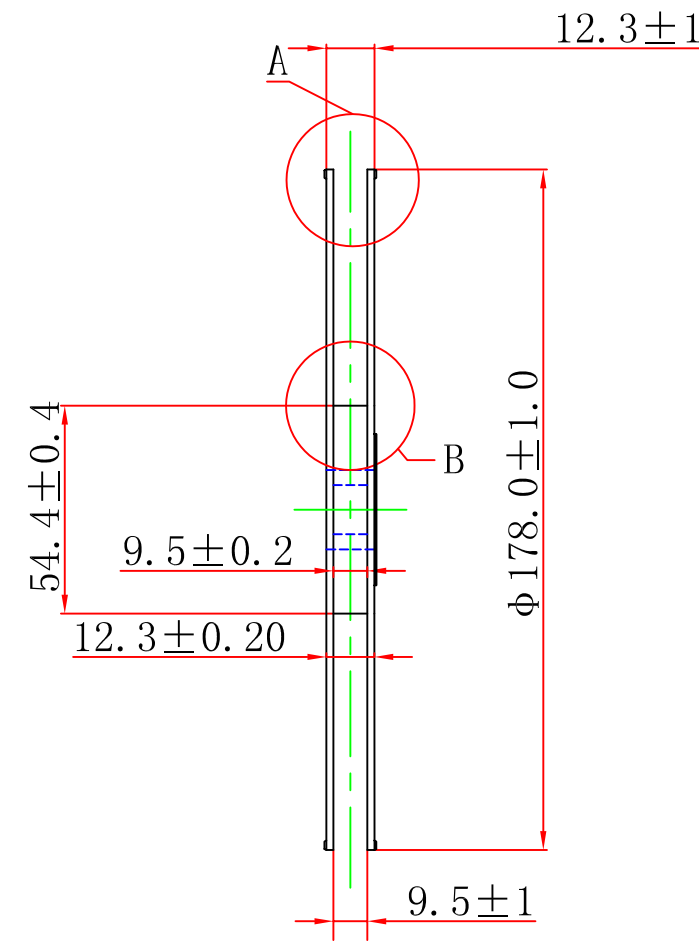
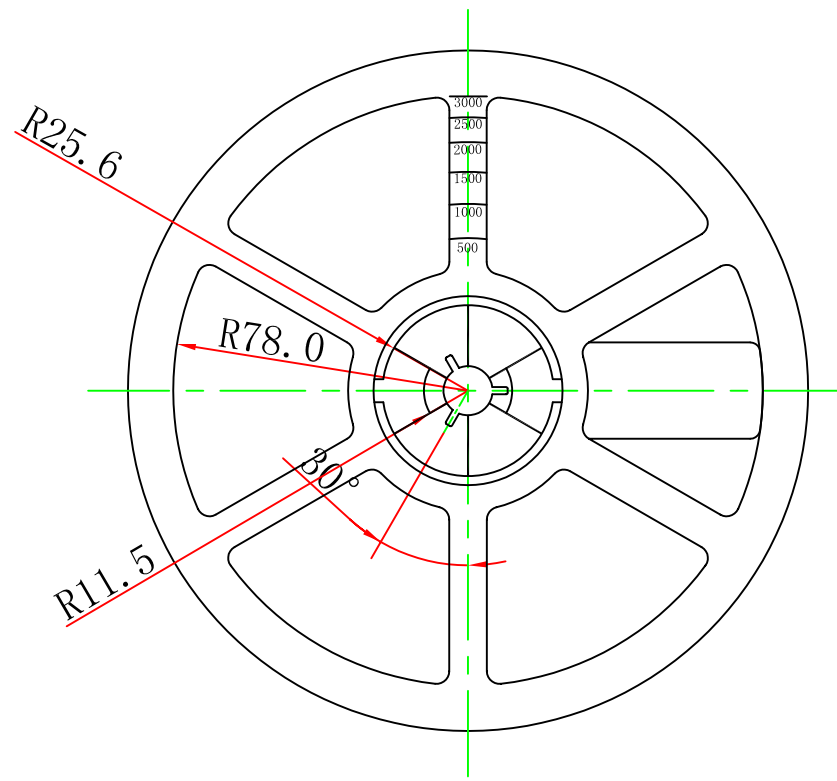


Packaging Information

SOT23-3 Package Outline Dimension



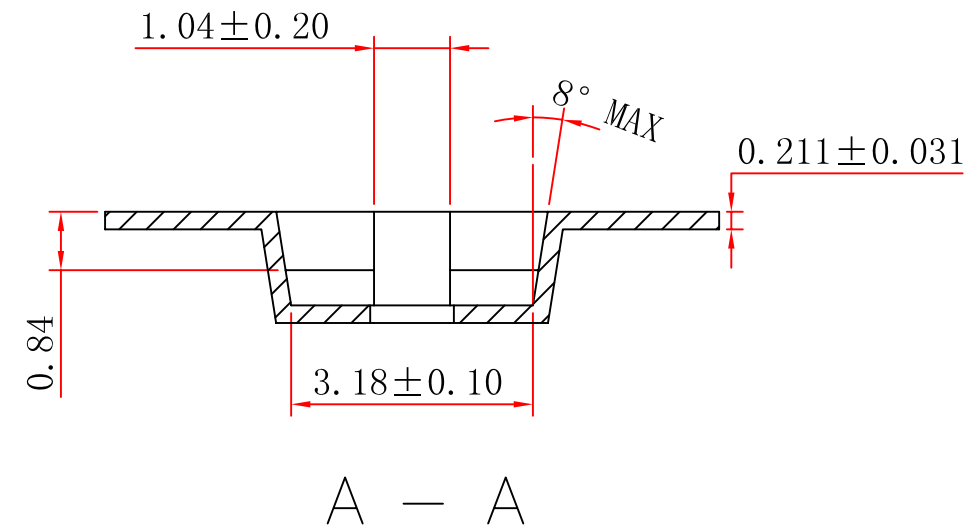
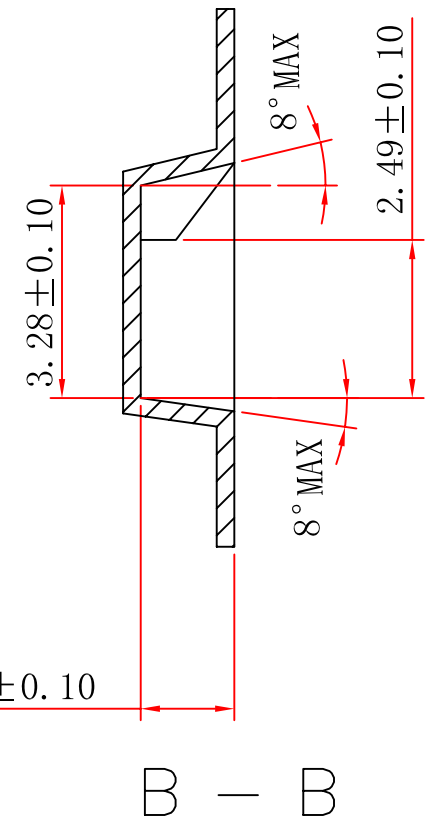
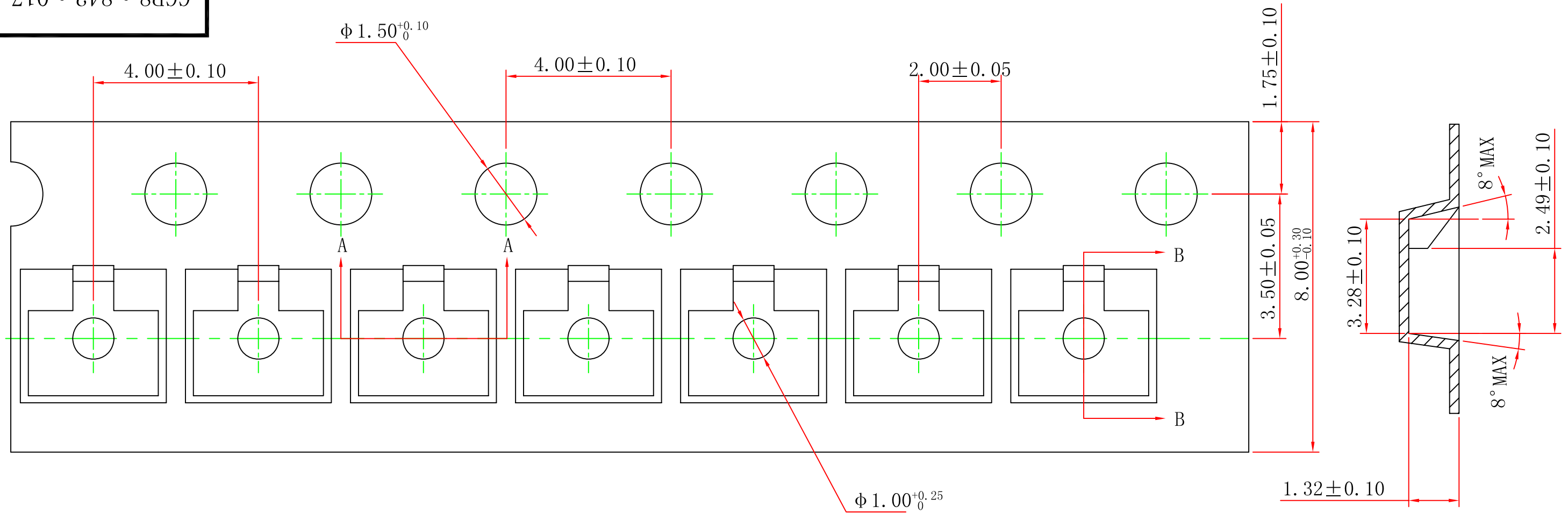
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



- NOTES:[技术要求]
- COLOR:BLUE [此卷盘颜色为蓝色];
 - ALL DIM IN mm [所有单位为mm];
 - ESD-SURFACE RESISTIVITY $10^5 \sim 10^{11}$ OHMS/SQ
[表面单位面积电阻系数为 $10^5 \sim 10^{11} \Omega/\square$];
 - GENERAL TOLERANCE ± 0.25 ; [未注公差 ± 0.25]
 - THIS REEL FORBIDS USING URROUNDINGS MANAGING MATTER OF JCET PRESCRIBING;
[禁止使用长电科技规定一级环境管理物质]
 - THE DIRECTION OF VIEW [视图方向]:



Change					GGP2007.012					Finish	_____	
Change					GGP2006.057	龚臻						
Mark	Q'TY	CN No.	Sign	Date	Reel (7") Drawing [卷盘图] (TR-JP-04)					GGP8 • 845 • 006		
Design												
Check												
Process												
Stand.					Material:HIPS					Step	Rev.	Scale
Approve											C	1 : 2
										1	OF	1
										JCET Co.,Ltd		



NOTES:[技术要求]:

1. CARRIER TAPE COLOR: BLACK [载带颜色为黑色]
2. COVER TAPE WIDTH: 5.50 ± 0.10 [配套5.5宽盖带]
3. COVER TAPE COLOR: TRANSPARENT [盖带颜色无色透明]
4. SURFACE ANTISTATIC COATED $10^5 \sim 10^{11}$ OHMS/SQ.
[单位面积表面阻抗 $10^5 \sim 10^{11} \Omega/\square$]
5. 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.20 MAX.
[10个传送定位孔间距累积公差0.02MAX.]
6. IN A REEL CARRIER THE THICKNESS CUMULATIVE TOLERANCE ± 0.02 MAX.
[在同一卷中载带厚度公差范围不得超过0.02mm]
7. CAMBER NOT TO EXCEED 1 MM IN 100 MM [载带直线弯曲度: $\leq 1\text{mm}/100\text{mm}$.]
8. MOLD# SOT-23-3L [载带规格SOT-23-3L]
9. ALL DIMS IN mm. [所有单位为mm]
10. THIS TAPE FORBIDS USING BANNED SUBSTANCES OF JCET PRESCRIBING.
[禁止使用长电科技规定的一级环境管理物质]
11. THE DIRECTION OF VIEW: [视图方向:

Finish

Change	GGP2006.085	龚臻		
Mark	Q' TY	CN NO.	Sign.	Date
Design				
Check				
Process				
Stand.				
Approve				

Carrier Tape
Drawing
[载带图]
(IC-ZD-08)

GGP8 • 842 • 017

Step	Rev.	Scale
1	B	10:1
1 of 1		

Material: PC

JCET Co., Ltd