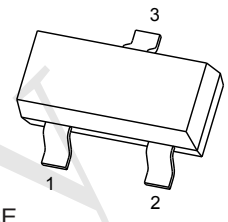
SZCJ Shenzhen Changji Semiconductor Co., LTD.

SOT-23 Plastic-Encapsulate MOSFETS

CJ2204 P-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-20 V	40mΩ@-4.5V	-2.8A
	43mΩ@-2.5V	
	80mΩ@-1.8V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

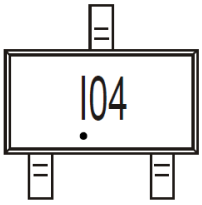
FEATURE

- TrenchFET Power MOSFET

APPLICATION

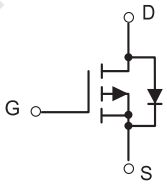
- PA Switch
- Load Switch

MARKING



I04= Device code
Solid dot = Green molding compound device
if none,the normal device

Equivalent Circuit



MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-2.8	A
Pulsed Drain Current	I_{DM} ①	-11.2	A
Power Dissipation	P_D ③	625	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ③	200	℃/W
Operating Junction and Storage Temperature Range	T_J ,T_{STG}	-55~+150	℃

Preliminary

MOSFET ELECTRICAL CHARACTERISTICS

T_A=25℃ unless otherwise specified

Parameter	Symbol	Test Condition		Min	Typ	Max	Unit
Off characteristics							
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA		-20	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V, V_{GS} =0V	T_J =25℃	-	-	-1.0	μA
			T_J =125℃	-	-	-100	
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±12V		-	-	±100	nA
On characteristics ②							
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA		-0.4	-0.8	-1.3	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-3A		-	29	40	mΩ
		V_{GS} =-2.5V, I_D =-3A		-	37	43	mΩ
		V_{GS} =-1.8V, I_D =-2A		-	58	80	mΩ
Forward tranconductance	g_{FS}	V_{DS} =-5V, I_D =-3.3A		3	7.5	-	S
Dynamic characteristics							
Input capacitance	C_{iss}	V_{DS} =-6V,V_{GS} =0V, f =1MHz		-	660	-	pF
Output capacitance	C_{oss}			-	110	-	
Reverse transfer capacitance	C_{rss}			-	62	-	
Gate resistance	R_g	f =1MHz		-	31	-	Ω
Switching characteristics							
Total gate charge	Q_g	V_{GS}=-4.5V, V_{DD}=-10V, I_D=-3.3A		-	6.9	-	nC
Gate-source charge	Q_{gs}			-	1.1	-	
Gate-drain charge	Q_{gd}			-	1.7	-	
Turn-on delay time	$t_{d(on)}$	V_{DS}=-6V, V_{GS}=-4.5V, R_L=6Ω , Rg=6Ω		-	186	-	ns
Turn-on rise time	t_r			-	86	-	
Turn-off delay time	$t_{d(off)}$			-	245	-	
Turn-off fall time	t_f			-	88	-	
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V_{SD} ②	V_{GS} =0V, I_S=-2A		-	-	-1.2	V
Continuous drain-source diode forward current	I_S			-	-	-2.8	A
Pulsed drain-source diode forward current	I_{SM} ①			-	-	-11.2	A

Notes:

1.Limited only by maximum temperature allowed.

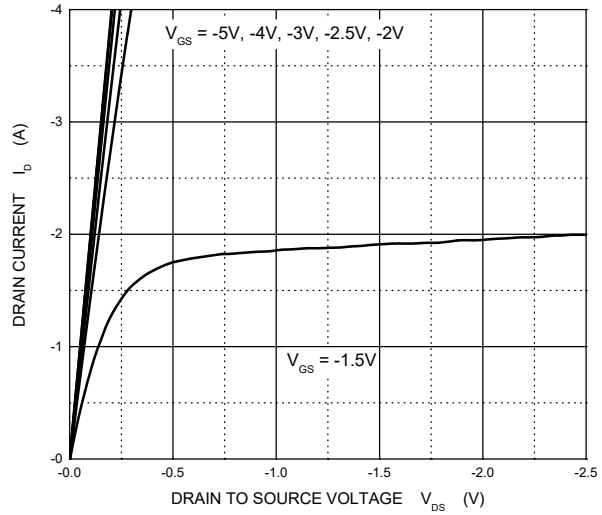
2.Pulse Test : Pulse Width≤380μs, duty cycle ≤2%.

3.Device mounted on 1 in² FR-4 board with single-sided 2oz. Copper, in a still air environment with T_A=25 ℃.

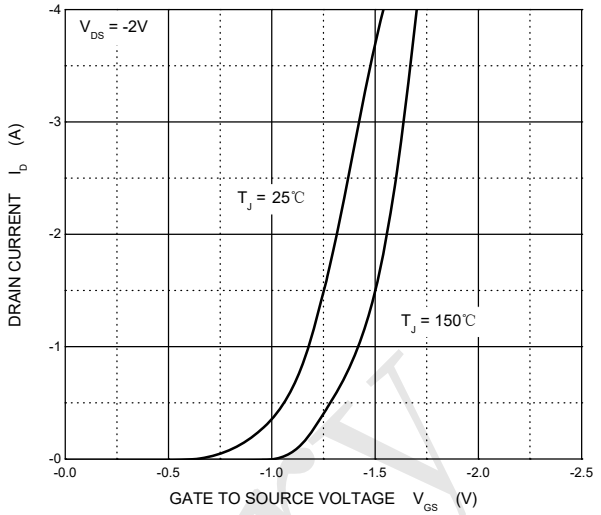
Preliminary

Typical Characteristics (T_J = 25℃, unless otherwise specified)

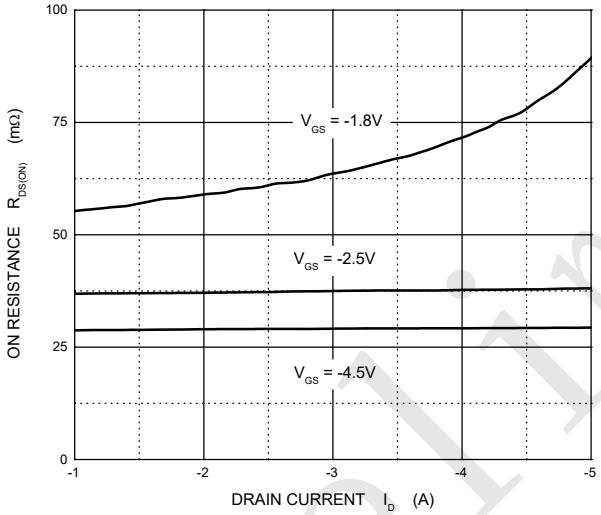
Output Characteristics



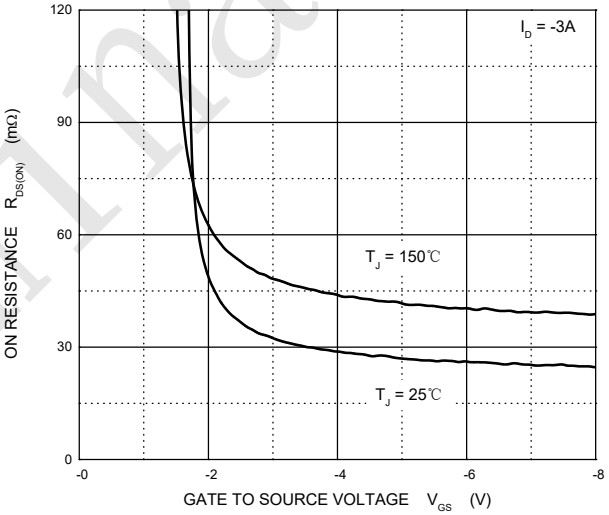
Transfer Characteristics



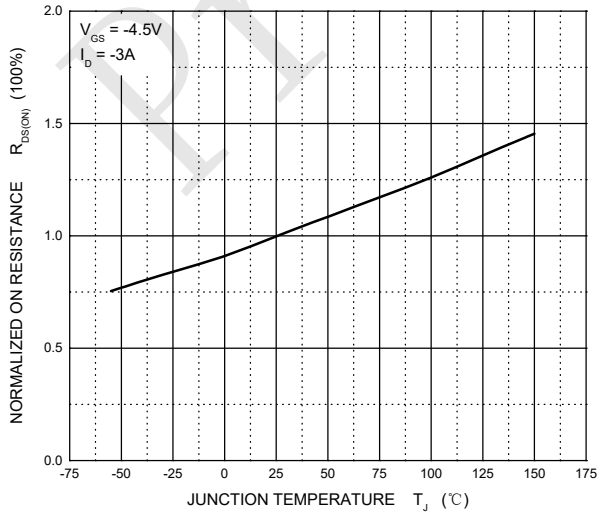
On Resistance vs. Drain Current



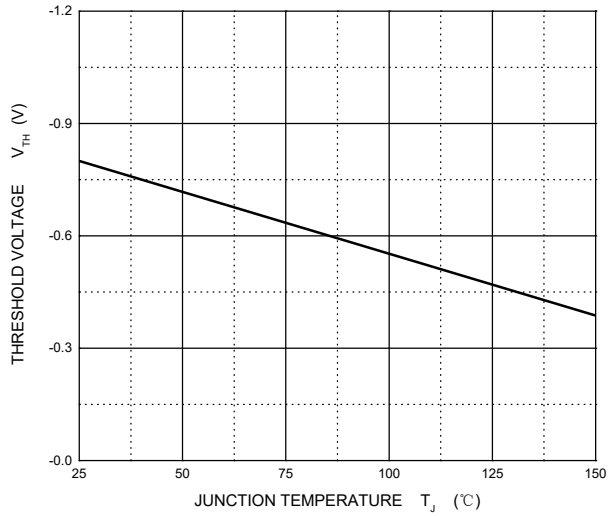
On Resistance vs. Gate-Source Bias



On Resistance vs. Junction Temperature



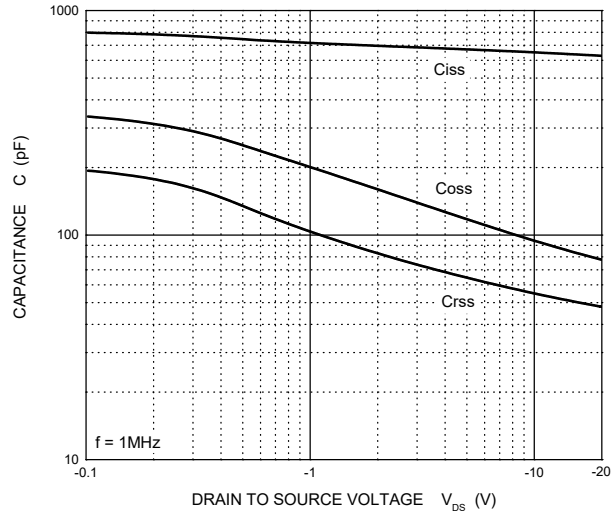
Gate-Source Threshold Voltage



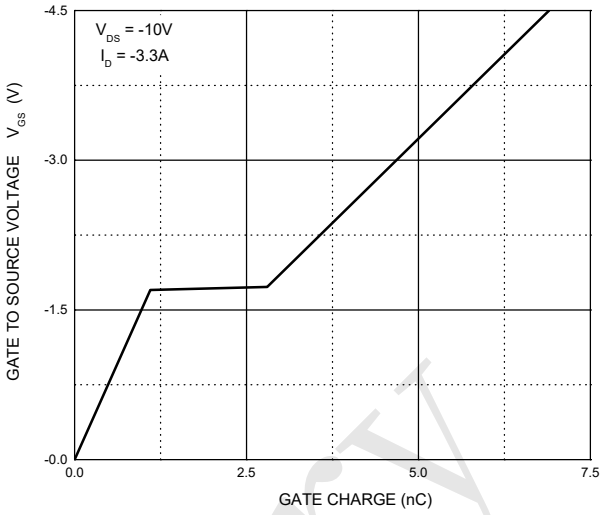
Preliminary

Typical Characteristics (T_J = 25℃, unless otherwise specified)

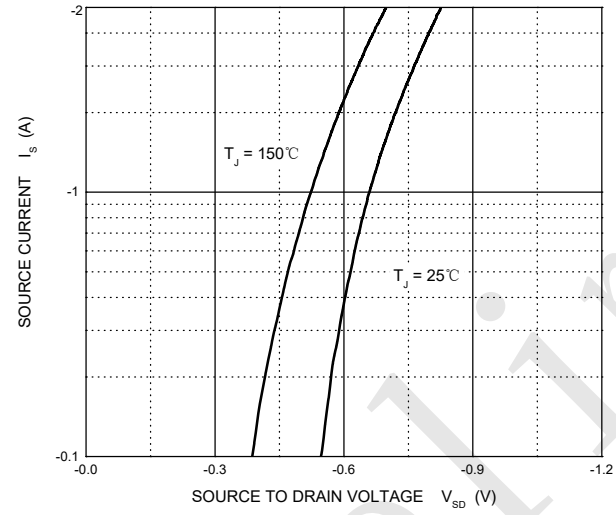
Typical Capacitances



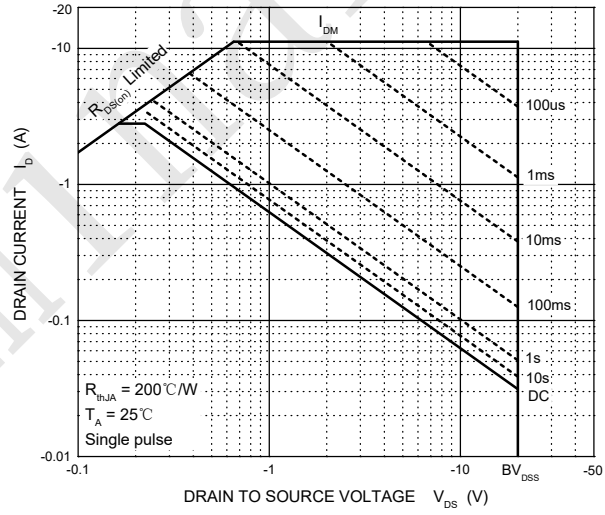
Gate Charge



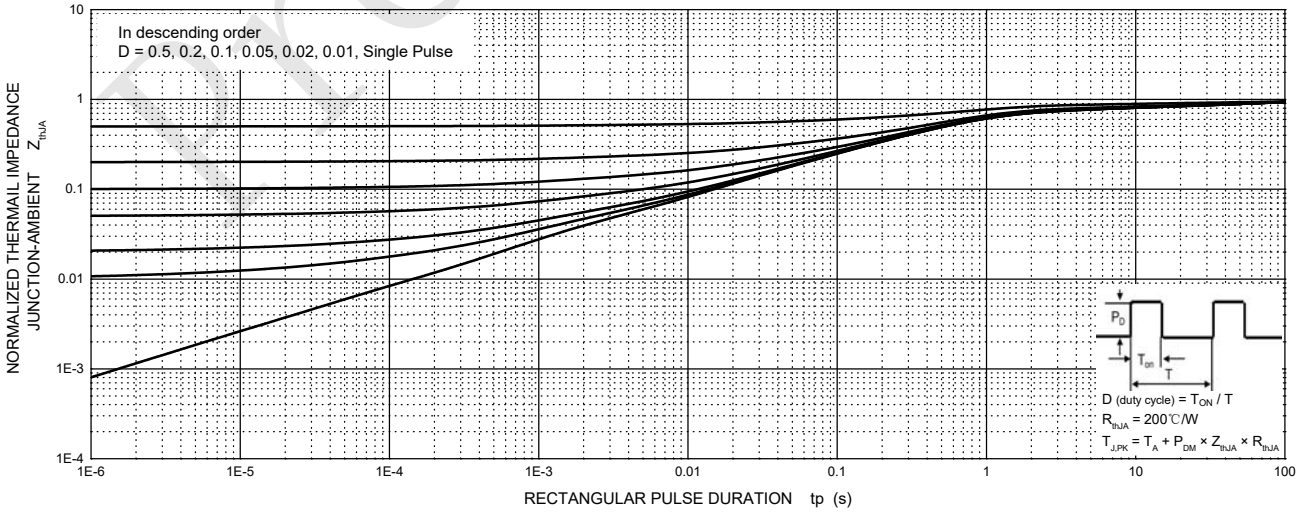
Source-Drain Diode Forward Characteristics



Maximum Safe Operating Area



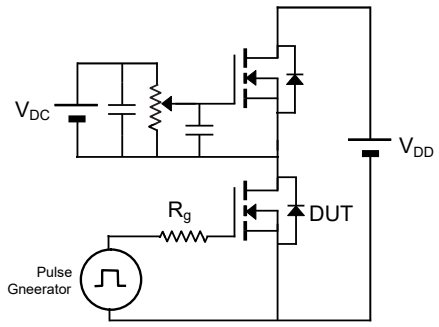
Transient Thermal Impedance, Junction-Ambient

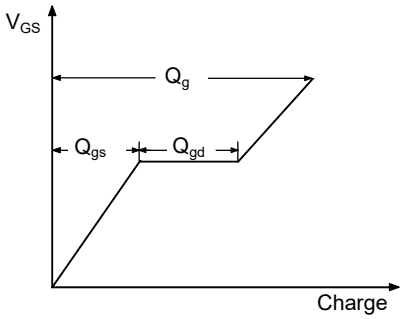


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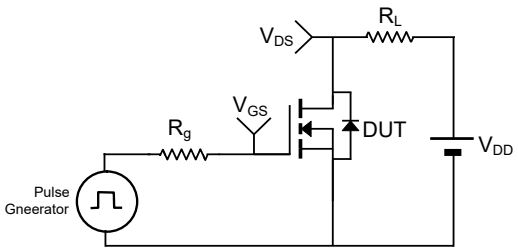
TEST CIRCUIT AND WAVEFOMRS

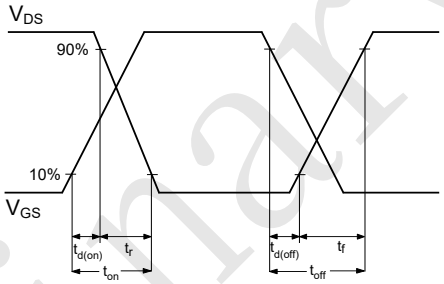
Gate Charge





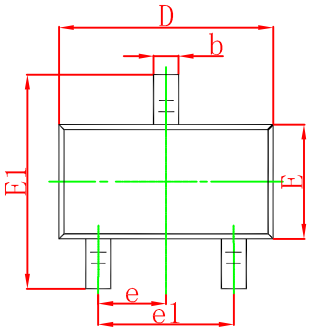
Resistive Load Switching Time

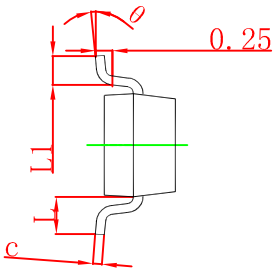


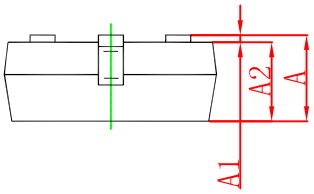


Preliminary

SOT-23 Package Outline Dimensions

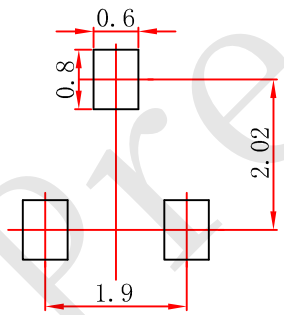






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

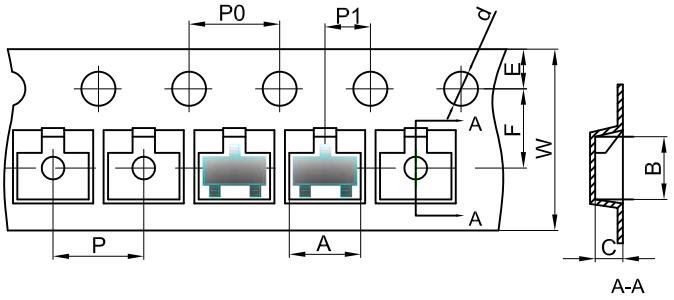
NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

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SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

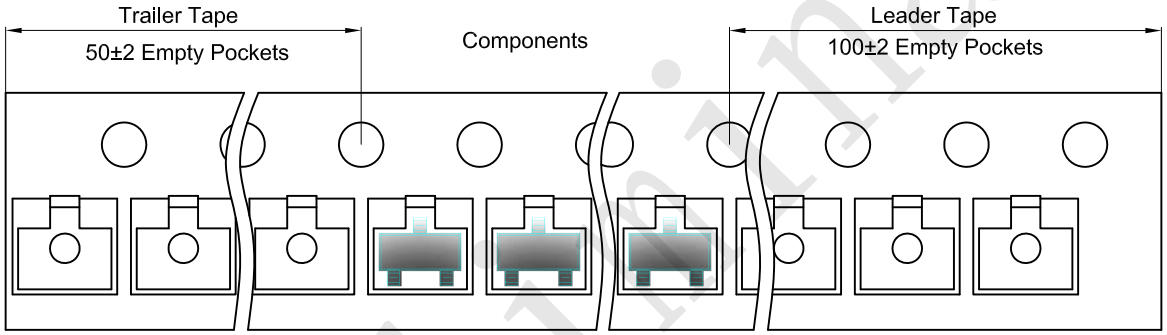


Packaging Description:

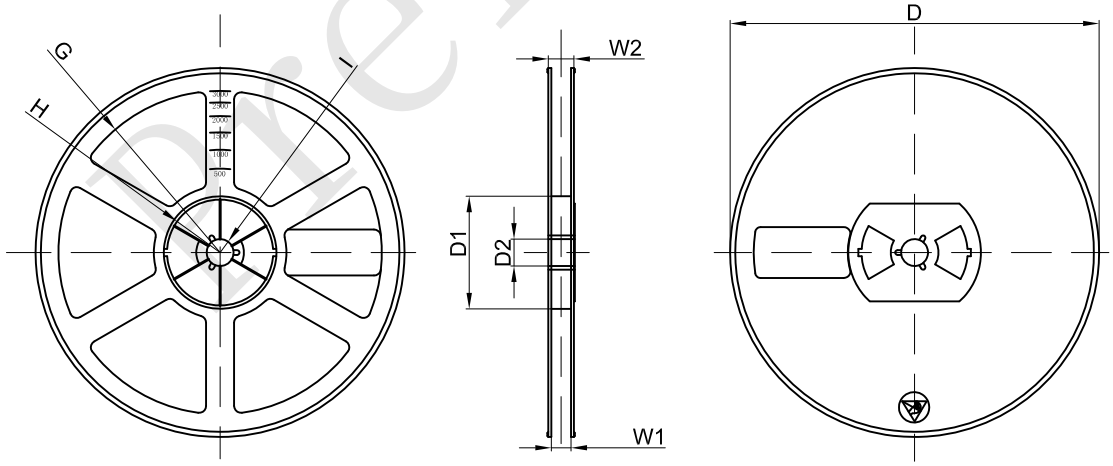
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	

Preliminary