

SOT-23-6L Plastic-Encapsulate MOSFETS

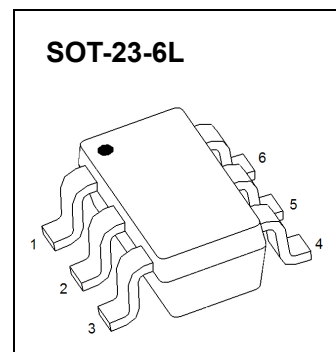
CJL6602 P-channel and N-channel Complementary MOSFETS

P-channel

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-30V	135mΩ@-10V	-2.3A
	185mΩ@-4.5V	
	265mΩ@-2.5V	

N-channel

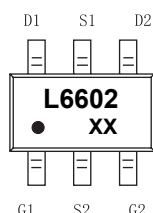
$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	60mΩ@10V	3.4A
	75mΩ@4.5V	
	115mΩ@2.5V	



GENERAL DESCRIPTION

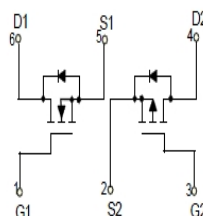
The CJL6602 uses advanced trench technology to provide excellent $R_{DS(on)}$ and low gate charge. The complementary MOSFETS form a high-speed power inverter and suitable for a multitude of applications.

MARKING



L6602=Device code
Solid point=Pin1 positioning point
XX=Date Code

Equivalent Circuit



Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value		Unit
		N-channel	P-channel	
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	± 12	± 12	V
Continuous Drain Current ⁽¹⁾	I_D	3.4	-2.3	A
Pulsed Drain Current ⁽²⁾	I_{DM}	30	-30	A
Power Dissipation	P_D	0.35	0.35	W
Thermal Resistance from Junction to Ambient ⁽¹⁾	$R_{\theta JA}$	357	357	$^\circ\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	-55~+150	$^\circ\text{C}$

1. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$. The value in any given application depends on the user's specific board design. The current ratings is based on $t \leq 10\text{s}$ thermal resistance rating.

2. Repetitive rating, pulse with limited by junction temperature.

MOSFET ELECTRICAL CHARACTERISTICS

N-channel MOSFET Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V, V _{GS} = 0V			1	μA
Gate-source leakage current (note1)	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
Drain-source on-resistance (note1)	R _{DS(on)}	V _{GS} =10V, I _D =3A		45	60	mΩ
		V _{GS} =4.5V, I _D =3A		50	75	mΩ
		V _{GS} =2.5V, I _D =2A		60	115	mΩ
Forward tranconductance (note1)	g _{FS}	V _{DS} =5V, I _D =3A	5			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.6		1.4	V
Diode forward voltage (note1)	V _{SD}	I _S =1A, V _{GS} =0V			1	V
Dynamic characteristics (note2)						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f =1MHz		390		pF
Output capacitance	C _{oss}			54.5		pF
Reverse transfer capacitance	C _{rss}			41		pF
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f =1MHz		3		Ω
Switching Characteristics(note2)						
Turn-on delay time	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =5Ω, R _{GEN} =6Ω		4		ns
Turn-on rise time	t _r			2		ns
Turn-off delay time	t _{d(off)}			22		ns
Turn-off fall time	t _f			3		ns

P-channel MOSFET Electrical Characteristics (T_A=25°C unless otherwise noted)

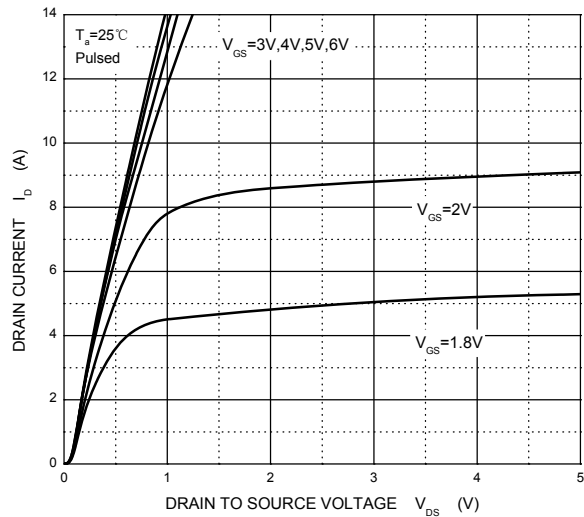
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-24V, V _{GS} = 0V			-1	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
Drain-source on-resistance (note1)	R _{DS(on)}	V _{GS} =-10V, I _D =-2.3A		75	135	mΩ
		V _{GS} =-4.5V, I _D =-2A		95	185	mΩ
		V _{GS} =-2.5V, I _D =-1A		140	265	mΩ
Forward tranconductance (note1)	g _{FS}	V _{DS} =-5V, I _D =-2.3A	4.5			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.6		-1.4	V
Diode forward voltage (note1)	V _{DS}	I _S =-1A, V _{GS} =0V			-1	V
Dynamic characteristics (note2)						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f =1MHz		409		pF
Output capacitance	C _{oss}			55		pF
Reverse transfer capacitance	C _{rss}			42		pF
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f =1MHz		12		Ω
Switching Characteristics (note2)						
Turn-on delay time	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =6Ω, R _{GEN} =6Ω		13		ns
Turn-on rise time	t _r			10		ns
Turn-off delay time	t _{d(off)}			28		ns
Turn-off fall time	t _f			13		ns

- Notes :** 1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.
2. Guaranteed by design, not subject to production testing.

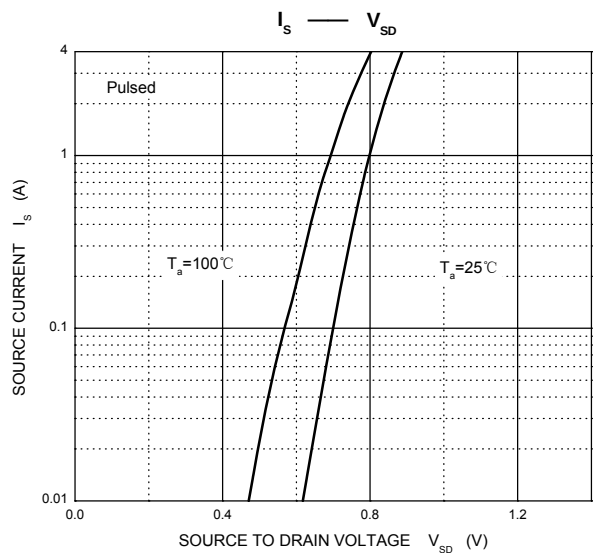
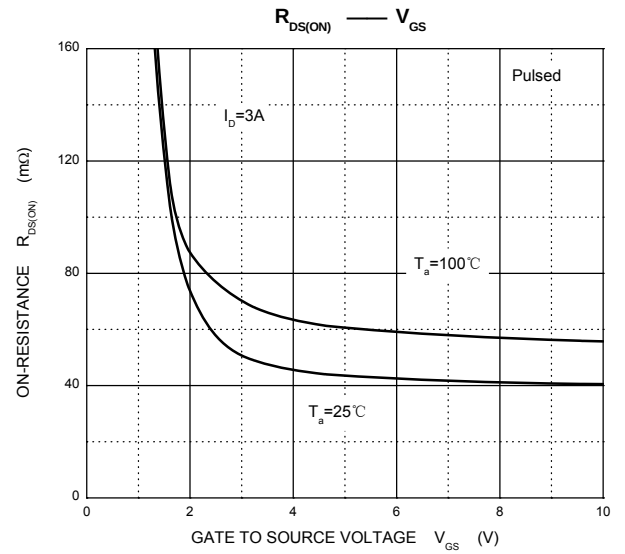
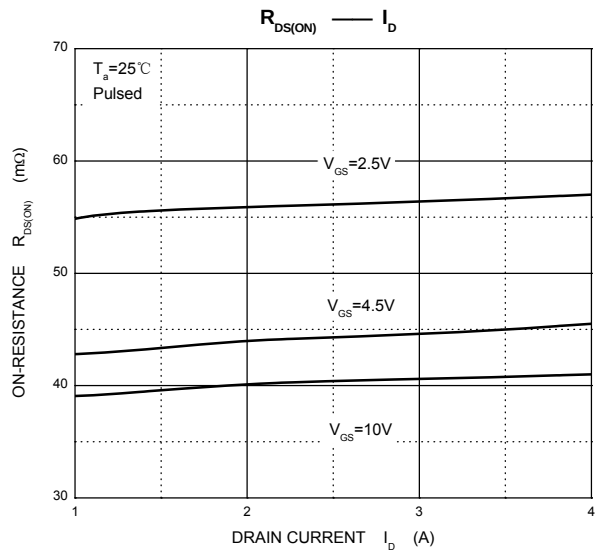
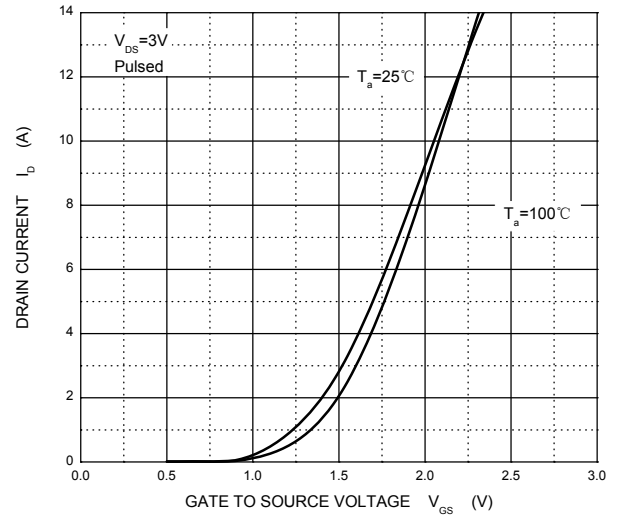
Typical Characteristics

N-Channel-MOS

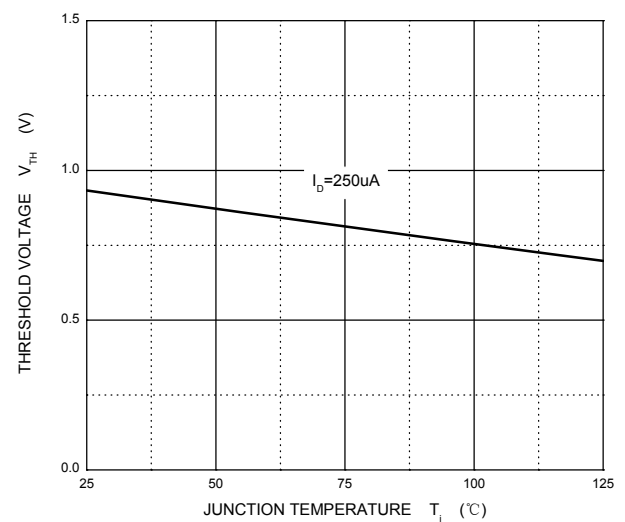
Output Characteristics



Transfer Characteristics

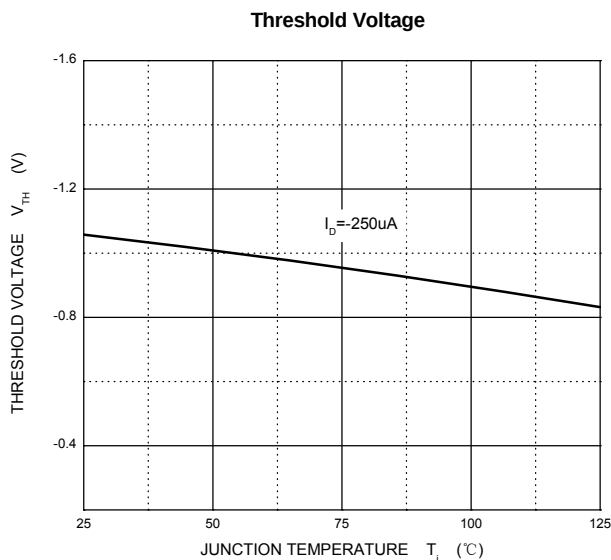
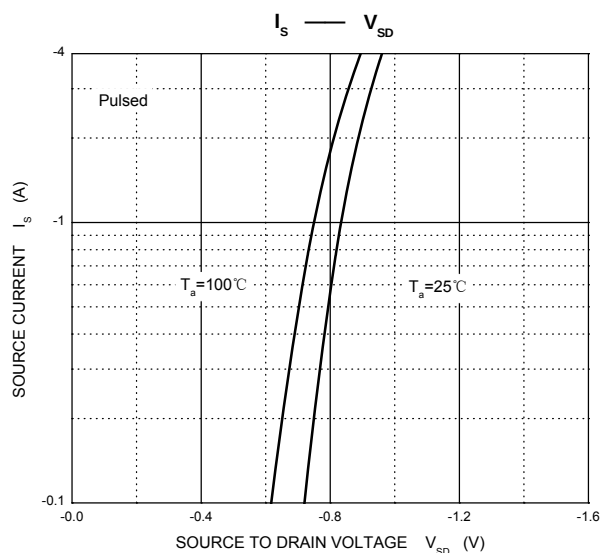
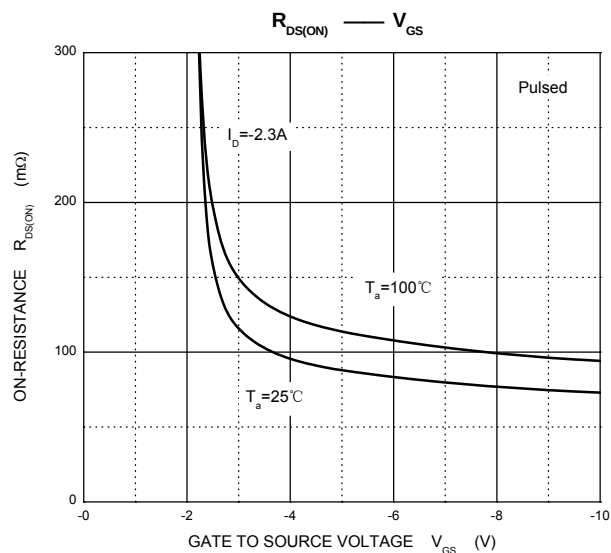
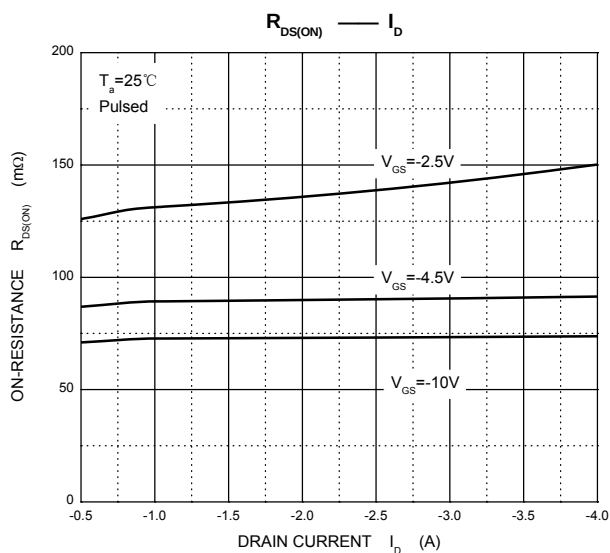
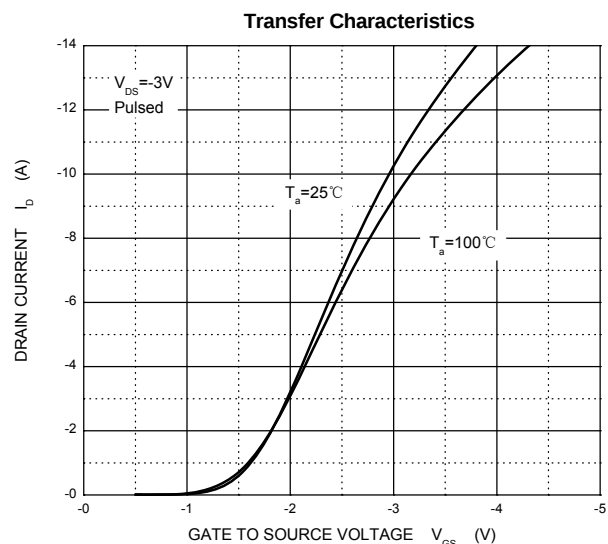
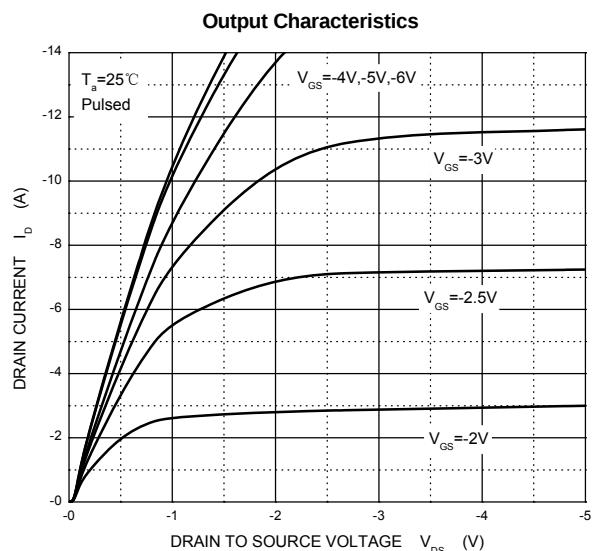


Threshold Voltage

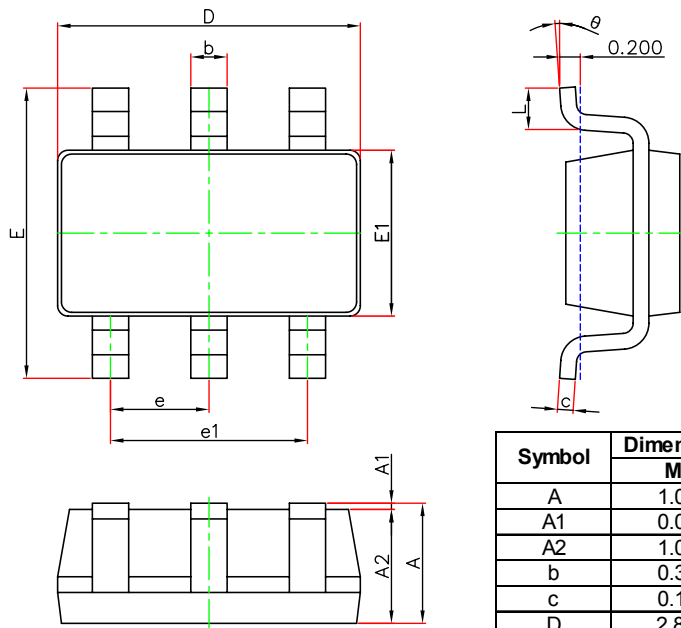


Typical Characteristics

P-Channel-MOS

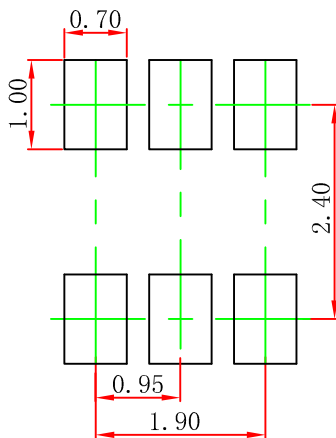


SOT-23-6L Package Outline Dimensions



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
E1	1.500	1.700	0.059	0.067
E	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°

SOT-23-6L Suggested Pad Layout



Note:

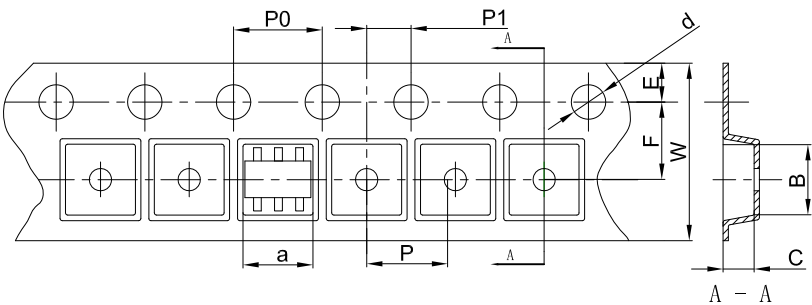
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

SOT-23-6L Tape and Reel

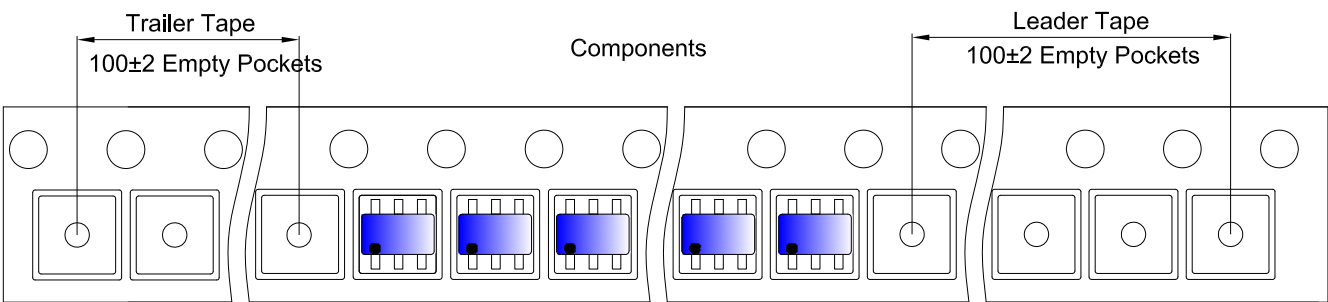
SOT-23-6L Embossed Carrier Tape



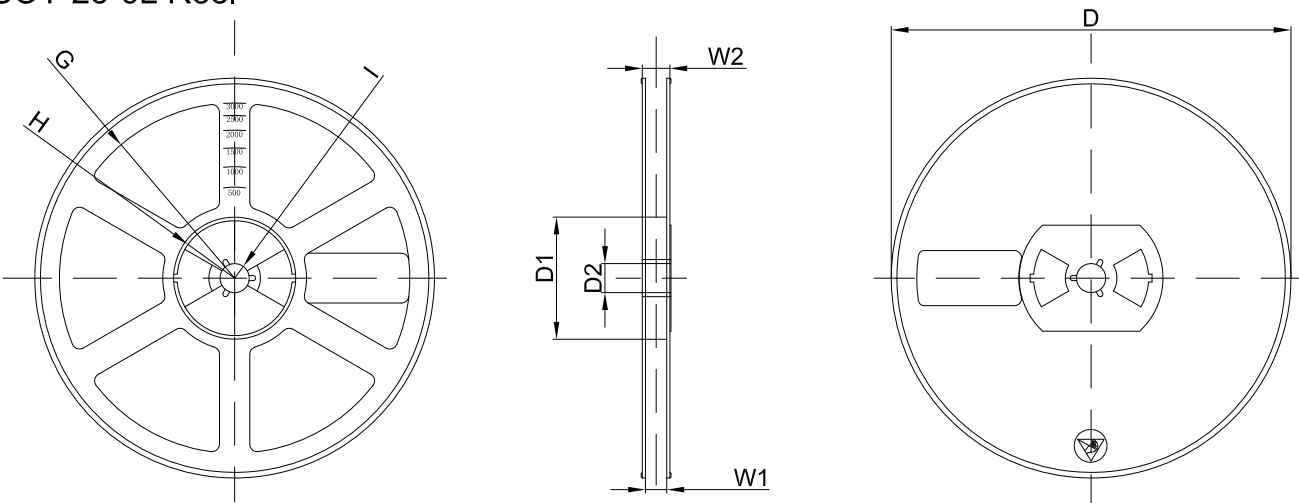
Packaging Description:
SOT-23-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm 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-23-6L	3.23	3.17	1.37	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23-6L Tape Leader and Trailer



SOT-23-6L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	