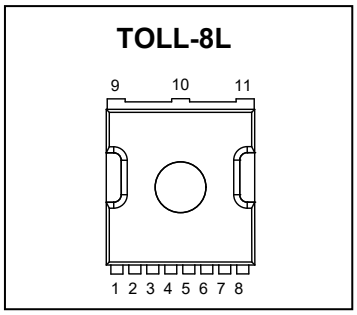
TOLL-8L Plastic-Encapsulate MOSFET

CJTL6R0SN15MK N-Channel Power MOSFET



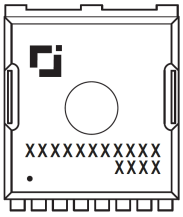
Key Performance Parameters

$V_{BR(DSS)}$	$R_{DS(on)}$TYP	I_D
150V	4.8mΩ@10V	150A

DESCRIPTION

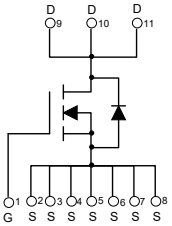
The CJTL6R0SN15MK uses SGT technology that is uniquely optimized to provide the most efficient high frequency switching performance. Both conduction and switching power losses are minimized due to an extremely low combination of RDS(on) and Qg. This device is ideal for high-frequency switching and synchronous rectification. It can be used in a wide variety of applications.

MARKING



XXXXXXXXXXX = TL6R0SN15MK
Solid dot = Pin1 indicator.
XXXX = Code.

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (T_J=25℃ unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C =25℃	I_D	150	A
	T_C =100℃		95	
Pulsed Drain Current		I_{DM}①②	600	A
Continuous Drain Current	T_A =25℃	I_D	12.7	A
	T_A =75℃		9.6	
Avalanche Current		I_{AS}③	43	A
Single Pulsed Avalanche Energy		E_{AS}③	470	mJ
Power Dissipation		P_D①	379	W
Operating Junction and Storage Temperature Range		T_J,T_{stg}	-55~+150	℃

Thermal Characteristics

Parameter	Symbol	Value		Unit
		Typ	Max	
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.22	0.33	℃/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$⑥	40	60	℃/W

Typical Characteristics

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Static Characteristics

Parameter	Symbol	Test Condition		Value			Unit
				Min	Typ	Max	
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA		150	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=150V, V_{GS}=0V	T_J=25℃	-	-	1.0	μA
			T_J=125℃	-	-	100	
Gate-body leakage current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V		-	-	±100	nA
Gate-threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA		2.0	3.0	4.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$④	V_{GS}=10V, I_D=20A	T_J=25℃	-	4.8	6.0	mΩ
			T_J=125℃	-	9.5	12	
Forward transconductance	g_{FS}	V_{DS}=5V, I_D=20A		-	89	-	S

Dynamic Characteristics⑤

Input capacitance	C_{iss}	V_{GS}=0V, V_{DS}=75V, f=1MHz	-	7111	-	pF
Output capacitance	C_{oss}		-	448	-	
Reverse transfer capacitance	C_{rss}		-	2	-	
Gate resistance	R_g	f=1MHz	-	2.7	-	Ω
Total gate charge	Q_g	V_{GS}=10V, V_{DS}=75V, I_D=20A	-	89	-	nC
Gate charge at threshold	$Q_{G(th)}$		-	20	-	
Gate-source charge	Q_{gs}		-	28	-	
Gate-drain charge	Q_{gd}		-	12	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=75V, V_{GS}=10V, I_D=20A, R_g=10Ω	-	46	-	ns
Turn-on rise time	t_r		-	29	-	
Turn-off delay time	$t_{d(off)}$		-	116	-	
Turn-off fall time	t_f		-	34	-	

Reverse Diode Characteristics

Drain-source diode forward voltage	V_{SD}④	V_{GS}=0V, I_S=20A	-	-	1.2	V
Continuous drain-source diode forward current	I_S①		-	-	150	A
Pulsed drain-source diode forward current	I_{SM}①②		-	-	600	A
Reverse recovery time	t_{rr}	V_{DD}=75V, I_S=20A, di/dt=500A/μs	-	52	-	ns
Reverse recovery charge	Q_{rr}		-	521	-	nC

Notes:

①.T_C=25℃ Limited only by maximum temperature allowed.

②.P_W ≤10μs, Duty cycle ≤1%.

③.EAS condition: V_{DD}=75V, V_{GS}=10V, L=0.5mH, R_g=25Ω Starting T_J=25℃.

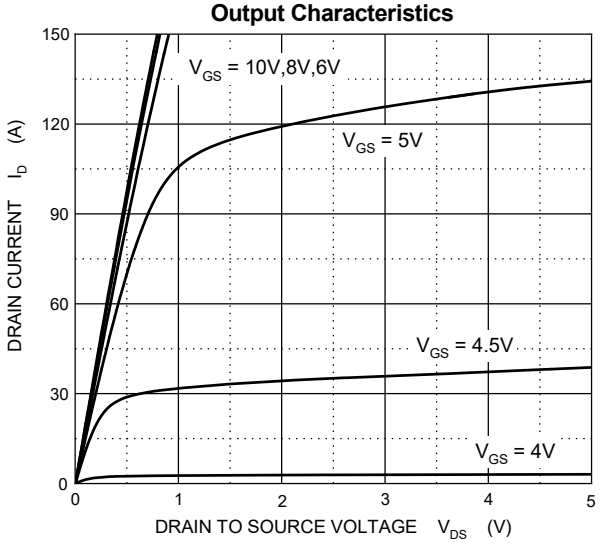
④.Pulse Test : Pulse Width ≤380μs, duty cycle ≤2%.

⑤.Guaranteed by design, not subject to production.

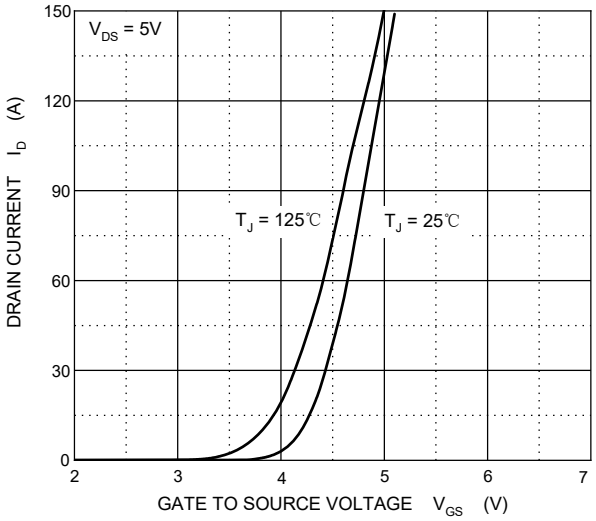
⑥.Device mounted on 1 in^2 FR-4 board with 2oz. double-sided Copper, in a still air environment with T_A=25℃.

Typical Characteristics

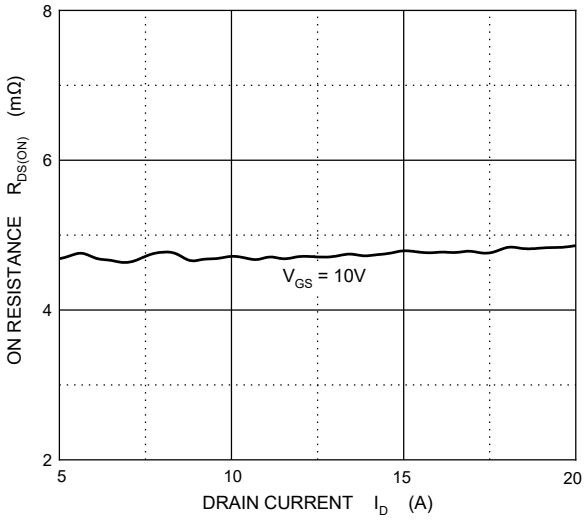
Output Characteristics



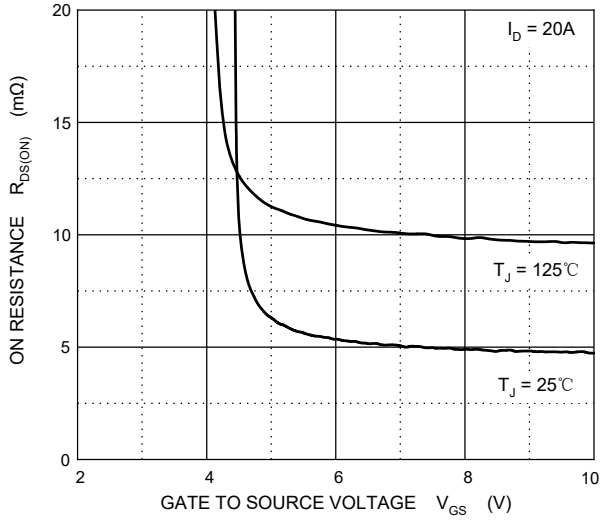
Transfer Characteristics



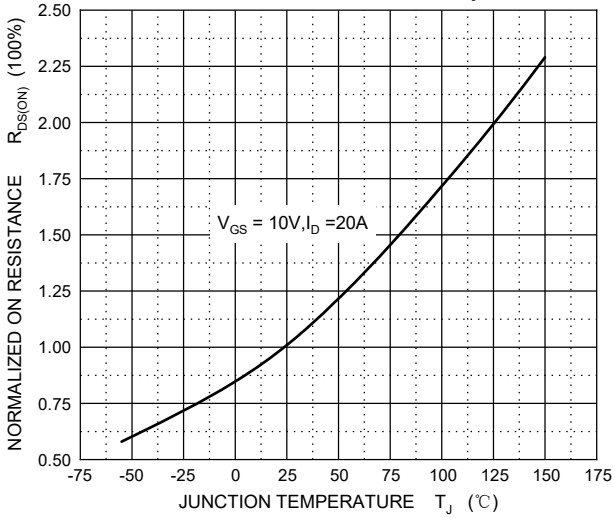
On Resistance vs. Drain Current



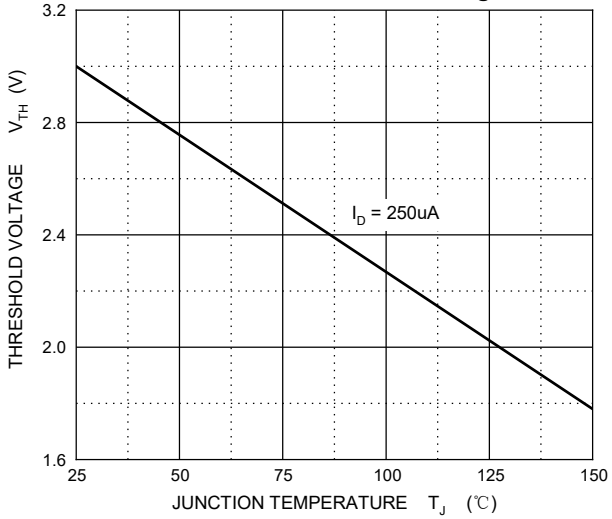
On Resistance vs. Gate-Source Bias



On Resistance vs. Junction Temperature

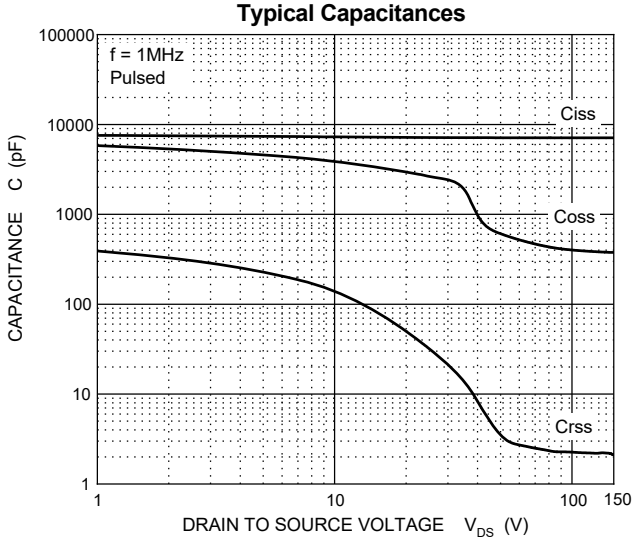


Gate-Source Threshold Voltage

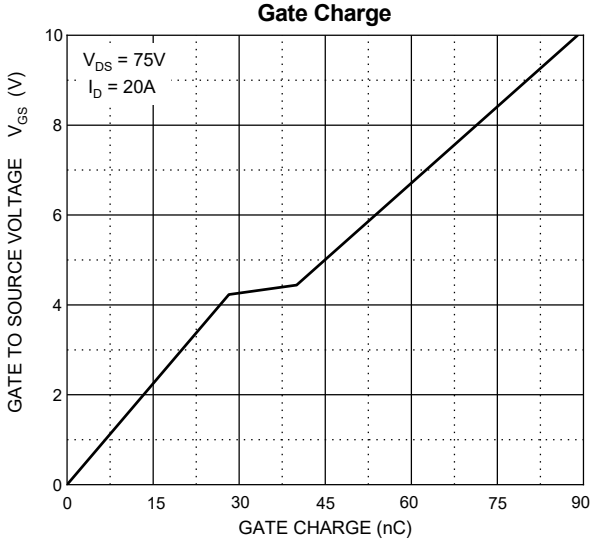


Typical Characteristics

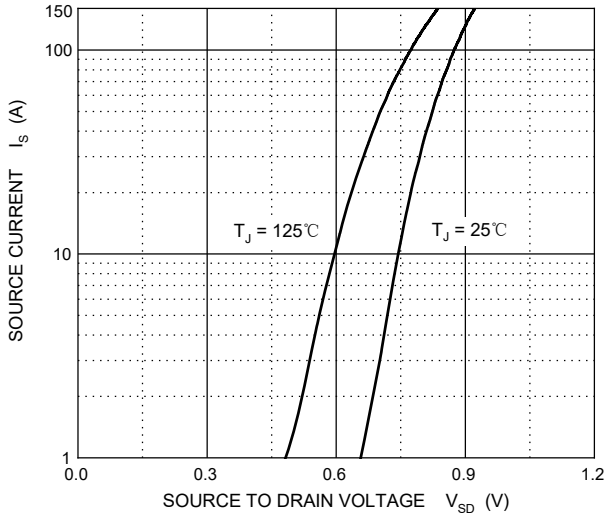
Typical Capacitances



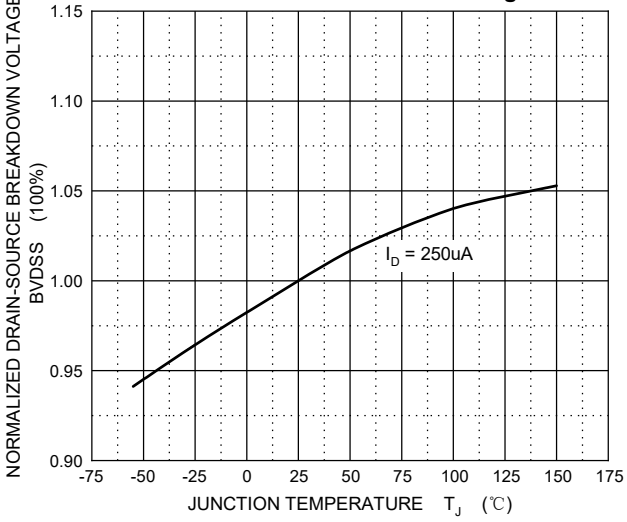
Gate Charge



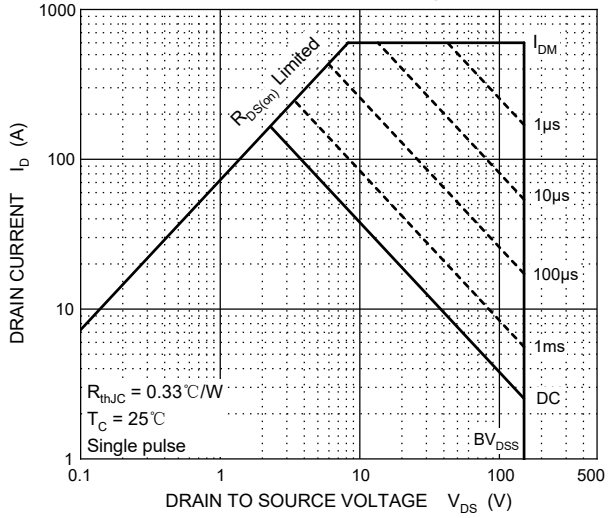
Source-Drain Diode Forward Characteristics



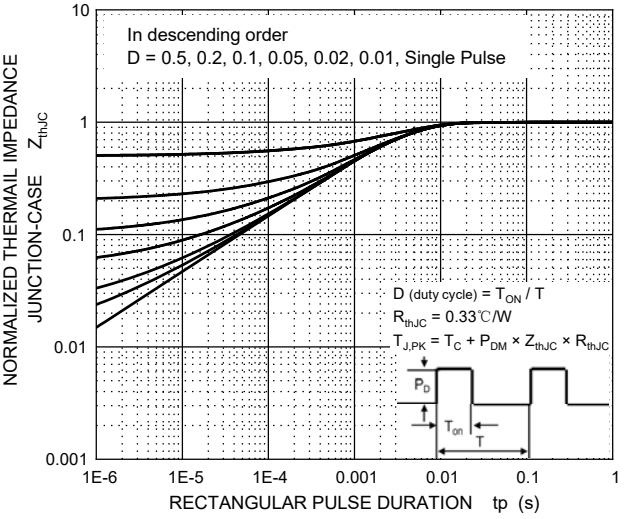
Drain-Source Breakdown Voltage



Maximum Safe Operating Area

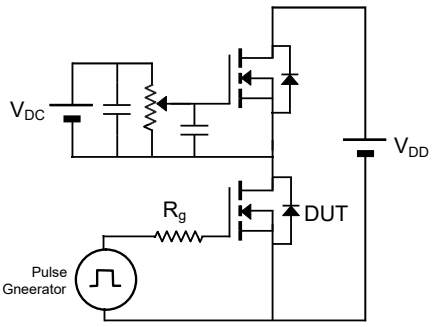


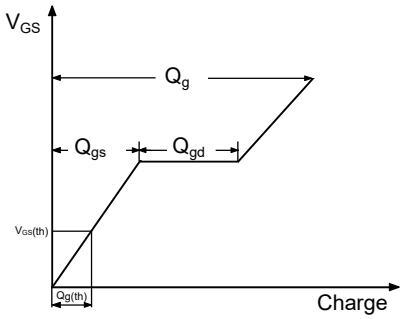
Transient Thermal Impedance, Junction-Case



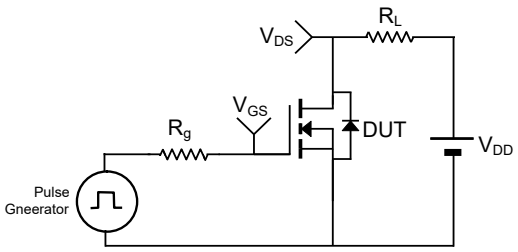
Test Circuit And Waveforms

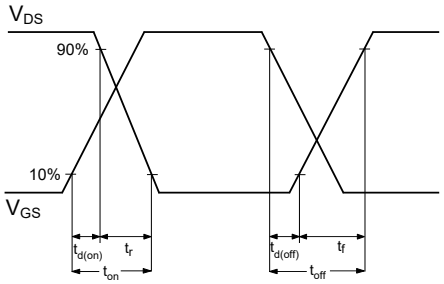
Gate Charge



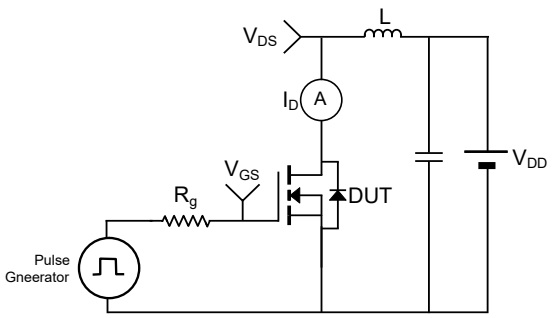


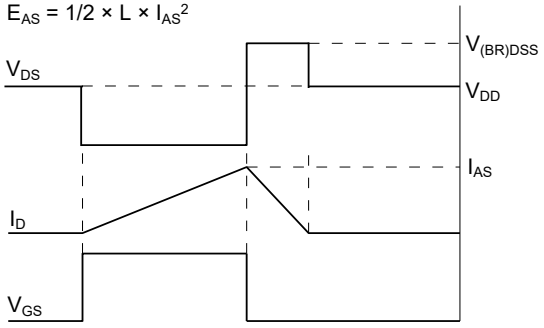
Resistive Load Switching Time



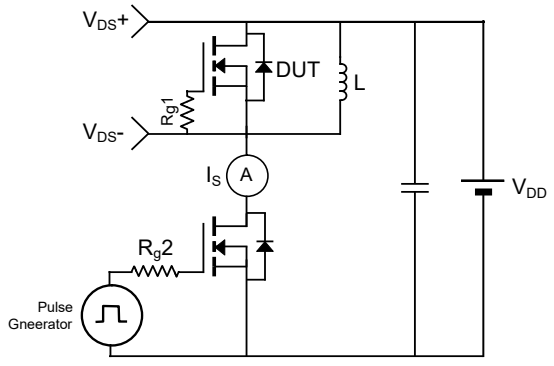


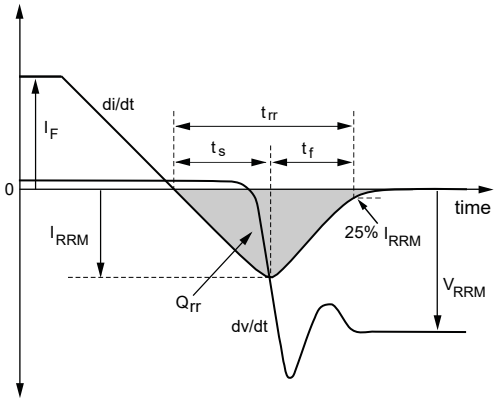
Un-clamped Inductive Load Switching



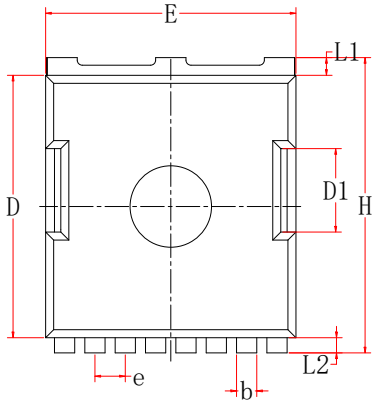


Drain-Source Body Diode Reverse Recovery

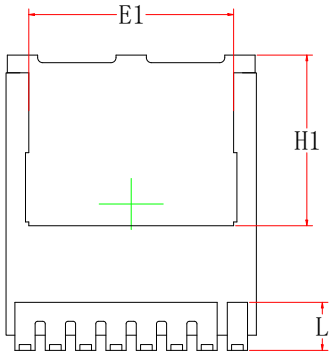




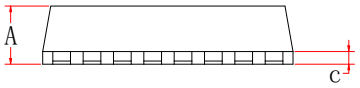
TOLL-8L PACKAGE OUTLINE DIMENSIONS



Top View
[顶视图]



Bottom View
[背视图]

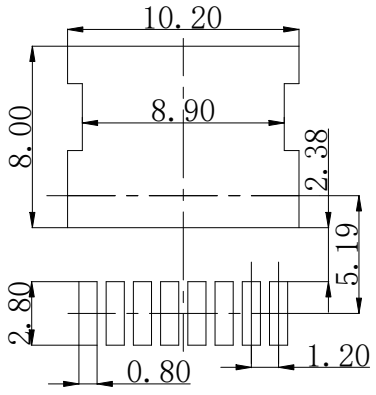


Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.087	0.094
b	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
D	10.28	10.58	0.405	0.417
D1	3.30BSC.		0.130BSC.	
E	9.70	10.10	0.382	0.398
E1	8.00	8.40	0.315	0.331
e	1.20BSC.		0.047BSC.	
H	11.48	11.88	0.452	0.468
H1	7.10BSC.		0.280 BSC.	
L	1.55	1.95	0.061	0.077
L1	0.50	0.90	0.020	0.035
L2	0.50	0.70	0.020	0.028

Notes：
1 Dimensions exclusive of mold gate burrs。
2 Dimensions exclusive of mold flash and cutting burrs。

TOLL-8L Suggested Pad Layout



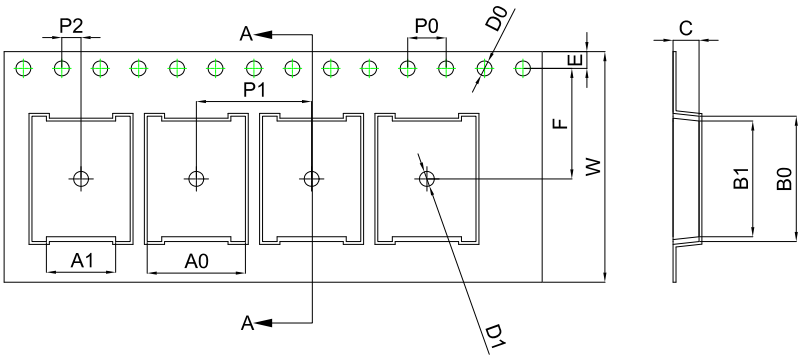
Controlling dimension：in millimeters.

NOTICE

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

TOLL-8L Tape and Reel

TOLL-8L Embossed Carrier Tape

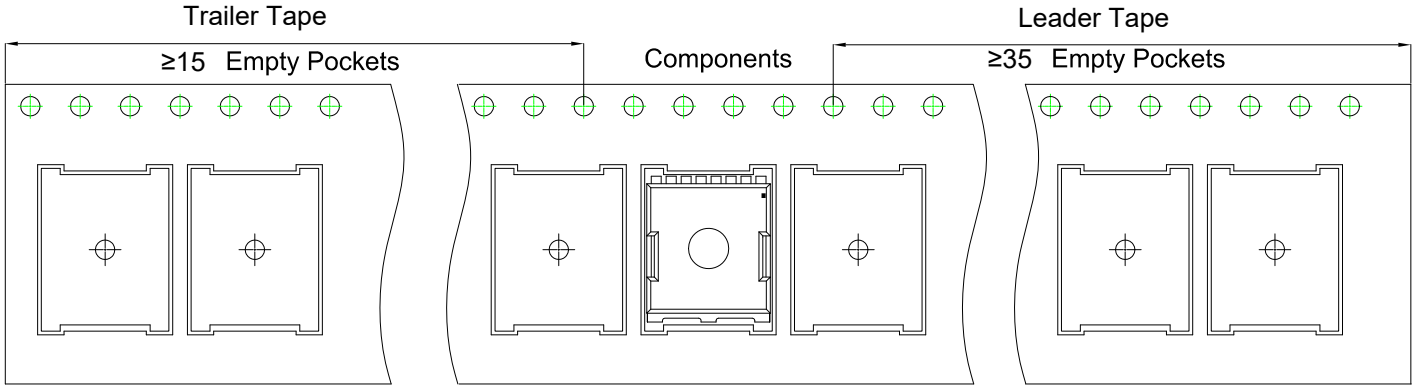


Packaging Description:

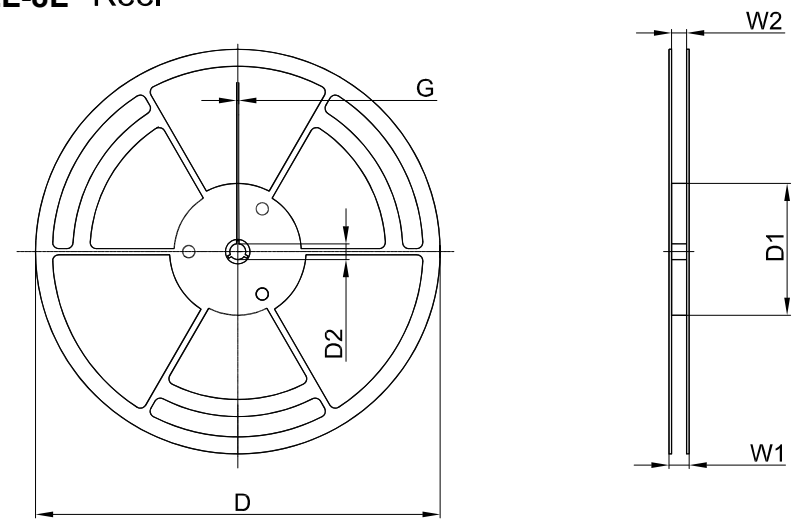
TOLL-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with **2,000** units per 13" or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter													
Pkg type	A0	A1	B0	B1	C	D0	D1	E	F	P0	P1	P2	W
TOLL-8L	10.22	7.20	12.04	13.04	2.70	1.55	1.55	1.75	11.50	4.00	12.00	2.00	24.00

TOLL-8L Tape Leader and Trailer



TOLL-8L Reel



Dimensions are in millimeter						
Reel Option	**D**	**D1**	**D2**	**G**	**W1**	**W2**
13" Dia	φ330.00	100.00	13.00	2.00	28.7	24.4

Reel	Reel Size	Box	Box Size (mm)	Carton	Carton Size (mm)
2,000 pcs	13 inch	2,000 pcs	360×360×65	10,000 pcs	378×358×382