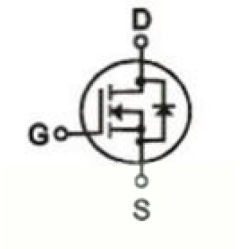
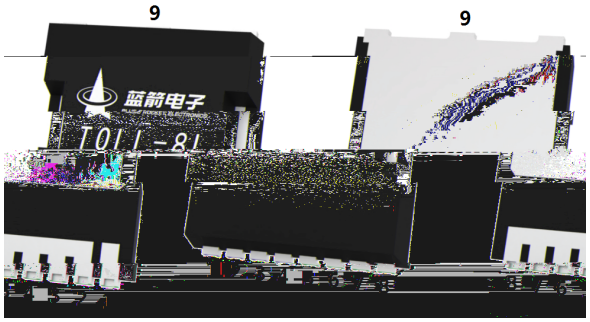
TOLL-8L N

V_{DS}(V)=100V I_D=300A
$R_{DS(ON)}$@10V≤1.3mΩ(Typ. 1.1mΩ)
$R_{DS(ON)}$@6V≤2.0mΩ(Typ. 1.5mΩ)
HF Product.

LCDM
LCD TV appliances,LCDM appliances,High power inverter system.





PIN1 G PIN2 3 4 5 6 7 8 S PIN9 D

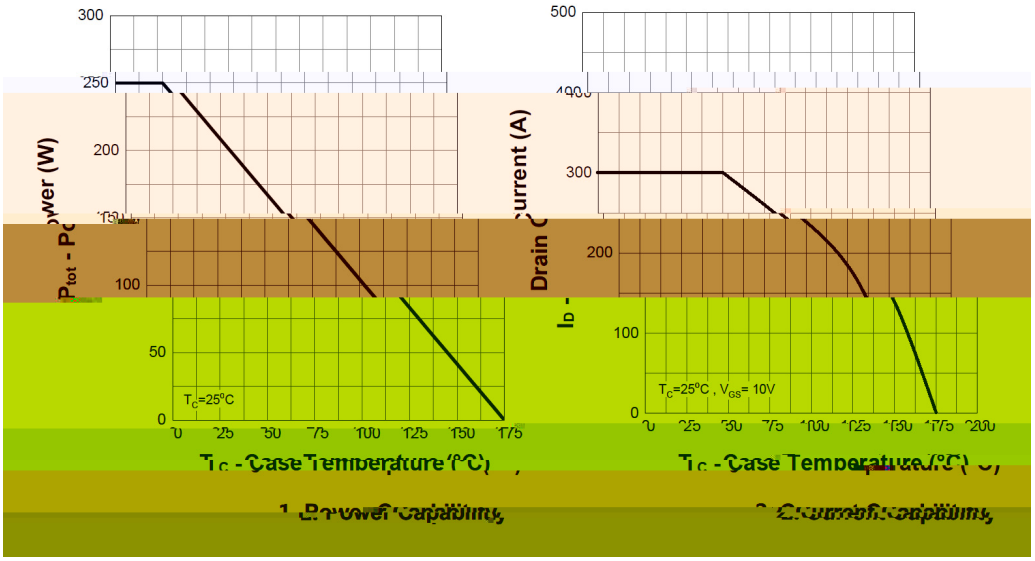
See Marking Instructions.

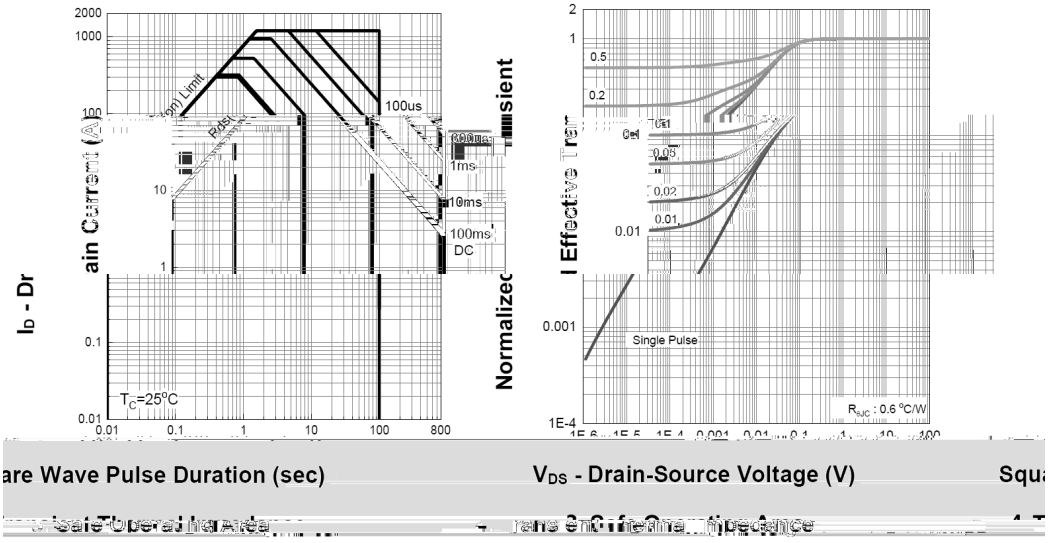
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Drain Current(DC)***	I_D(T_C=25)	300	A
	I_D(T_C=100)	215	A
Drain Current – Pulsed*,**	I_{DM}	1200	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	P_{tot}	250	W
Continuous-Source Current	I_S	400	A
Single Pulse Avalanche Energy(V_{DD}=50V,L=1.0mH)	E_{AS}	2592	mJ
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 175	
Thermal resistance, junction – ambient**	$R_{\theta JA}$	46	
Thermal resistance, junction – case**	$R_{\theta JC}$	0.6	

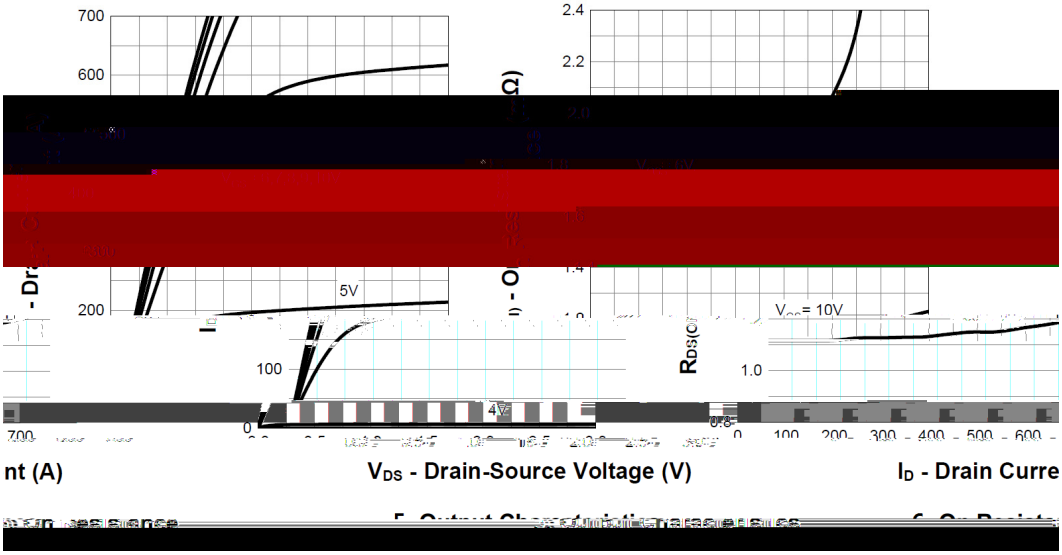
Notes:
* Pulse width ≤ 300 μs, duty cycle ≤ 2 %
** Surface Mounted on 1 in pad area,t ≤ 10sec
*** Limited by bonding wire

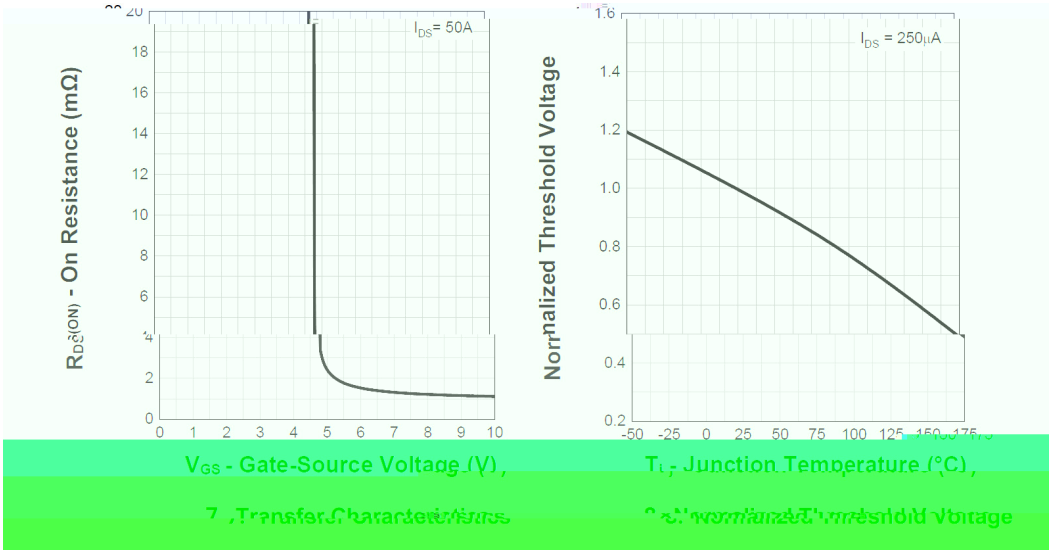
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250uA, V_{GS}=0V	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=80V, V_{GS}=0V			1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	2		4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=50A		1.1	1.3	m
		V_{GS}=6V, I_D=30A		1.5	2.0	
Diode Forward Voltage	V_{SD}	I_S=50A, V_{GS}=0V			1.3	V
Reverse Recovery Time	t_{rr}	I_F = 50 A, V_{DS} = 50 V dI$_{SD}$/dt = 100 A/ μ s		140		ns
Reverse Recovery Charge	Q_{rr}			403		nC
Input Capacitance	C_{iss}	V_{DS}=50V V_{GS}=0V f=1.0MHz		12881		pF
Output Capacitance	C_{oss}			2122		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V I_{DS}=50A		196		nC
Gate Source Charge	Q_{gs}			68		
Gate Drain Charge	Q_{gd}			35		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=50V R_G=3.9Ω R_L=1Ω I_D=50A		41		nS
Turn-On Rise Time	t_r			172		
Turn-Off Delay Time	$t_{d(off)}$			111		
Turn-Off Fall Time	t_f			132		

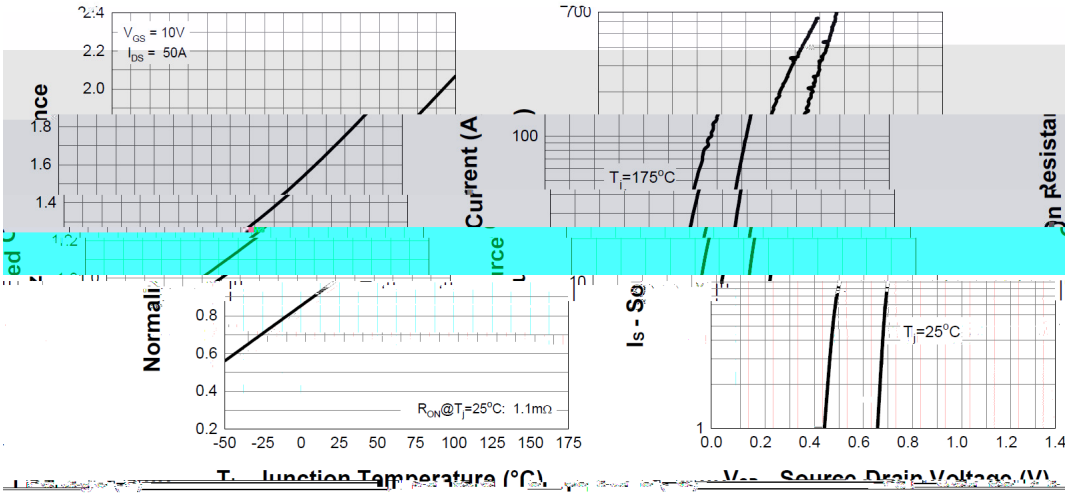

300
250
200
150
100
50
0
T_C=25°C
500
300
200
100
0
T_C=25°C , V_{GS}= 10V


2000
1000
100
10
1
0.1
0.01
0.01
0.1
1
10
100
800
100us
1ms
10ms
100ms
DC
T_C=25°C
2
1
0.5
0.2
0.1
0.05
0.02
0.01
0.01
0.001
1E-4
Single Pulse
$R_{\theta JC}$: 0.6 °C/W

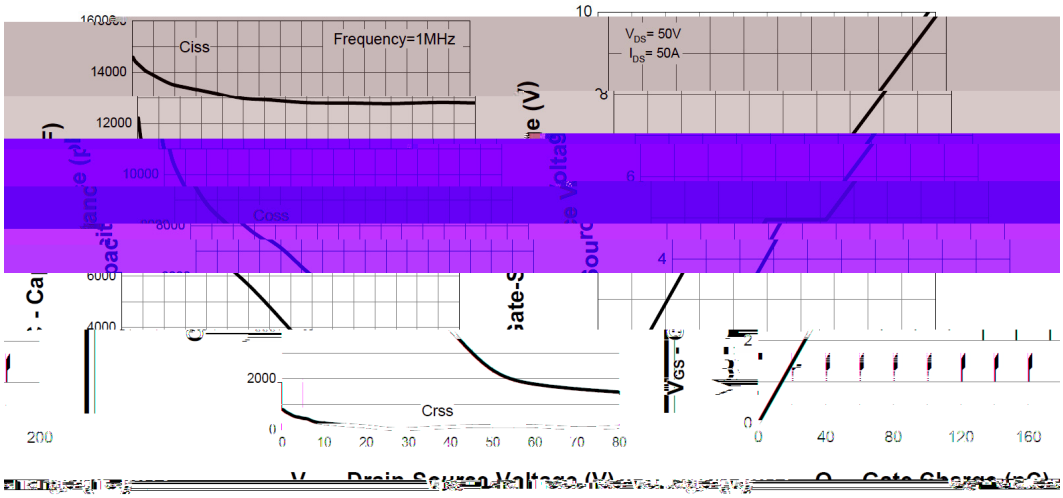

700
600
200
100
0
5V
4V
2.4
2.2
1.4
1.0
V_{GS} = 10V
100
200
300
400
500
600



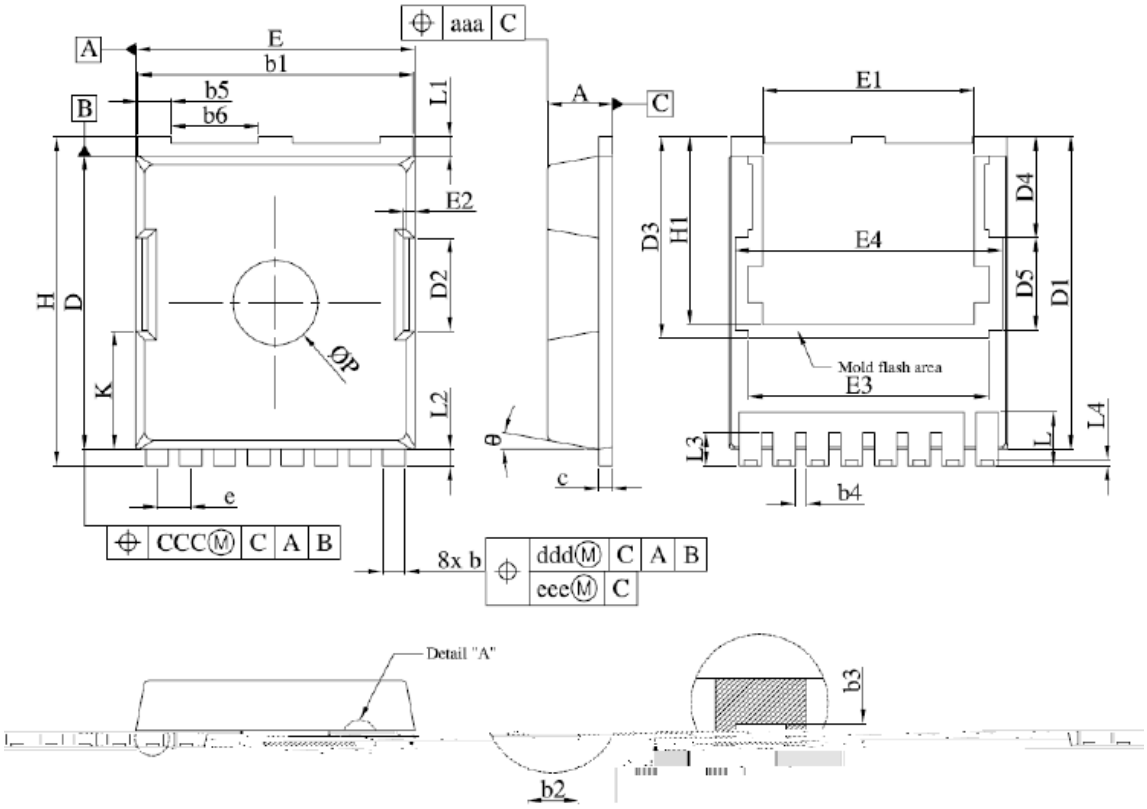
7. Transfer Characteristics 8. Normalized Threshold Voltage



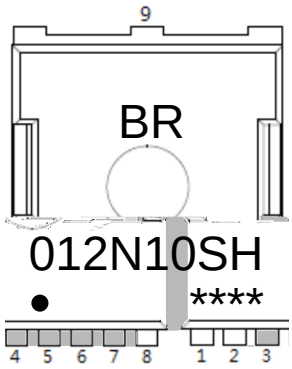
ırd Current 9. Normalized On Resistance 10. Diode Forwa



2. Gate Charge 11. Capacitance



A	2.20	2.40	E2	7.40	7.60
b	0.70	0.90	E3	8.50	
b1	9.70	9.90	E4	9.46	
b2	0.36	0.55	H	11.50	11.85
b3	0.05	/	H1	6.55	6.75
b4	0.30	0.50	K	4.08	4.28
b5	1.10	1.30	L	1.60	2.10
b6	3.00	3.20	L1	0.50	0.90
c	0.40	0.60	L2	0.50	0.70
D	10.28	10.55	L3	1.00	1.30
D1	10.98	11.18	L4	0.13	0.33
D2	3.20	3.40	P	2.85	3.15
D3	7.15		θ	10°REF	
D4	3.59		aaa	0.20	
D5	3.26		ccc	0.20	
e	1.10	1.30	ddd	0.25	
E	9.80	10.00	eee	0.20	
E1	7.40	7.60			

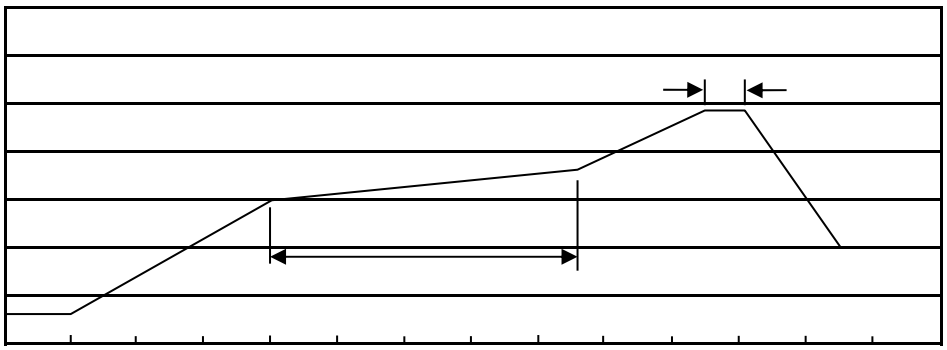


012N10SH

Note

BR	Company Code
012N10SH	Product Type Code
****:	Lot No. Code, code change with Lot No.

Temperature Profile for IR Reflow Soldering(Pb-Free)



1 150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2 245 5 5 0.5sec;	2.Peak Temp.:245 5 , Duration:5 0.5sec.
3 2 10 /sec.	3. Cooling Speed: 2~10 /sec.

Note:

260 5 10 1 sec. Temp.:260±5 Time:10±1 sec

/ REEL

Package Type	Units ;>ß ƒH					Dimension ;>ß p . (unit ˘ mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TOLL-8L	2,000	1	2,000	6	12,000	13''×24	360×360×50	380×335×366

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