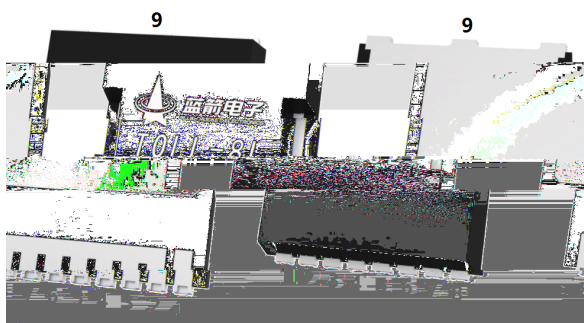
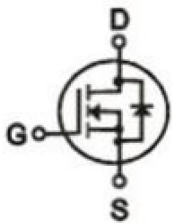


Rev.E May.-2026

TOLL-8L N
 N-Channel MOSFET in a TOLL-8L Plastic Package.

$V_{DS}(V)=40V$ $I_D=395A$
 $R_{DS(ON)}@10V \leq 1.3m\Omega$ (Typ. $0.85m\Omega$)
 HF Product.

Motor drivers, Battery management, DC - DC Converter.



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

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Drain Current - Continuous	I_D	395	A
Drain Current - Continuous	$I_D(T_c=100^\circ\text{C})$	250	A
Drain Current – Pulsed	I_{DM}	1580	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	P_{tot}	272	W
Single Pulse Avalanche Energy	E_{AS}	1369	mJ
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 150	
Thermal resistance, junction - ambient			

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_G=1.6\Omega$		32		ns
Turn-On Rise Time	t_r			65		
Turn-Off Delay Time	$t_{d(off)}$			75		
Turn-Off Fall Time	t_f			40		

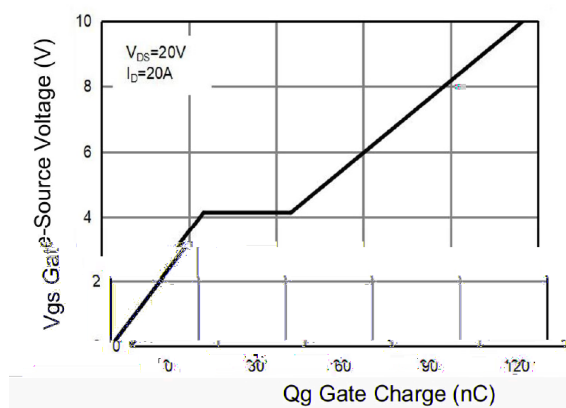
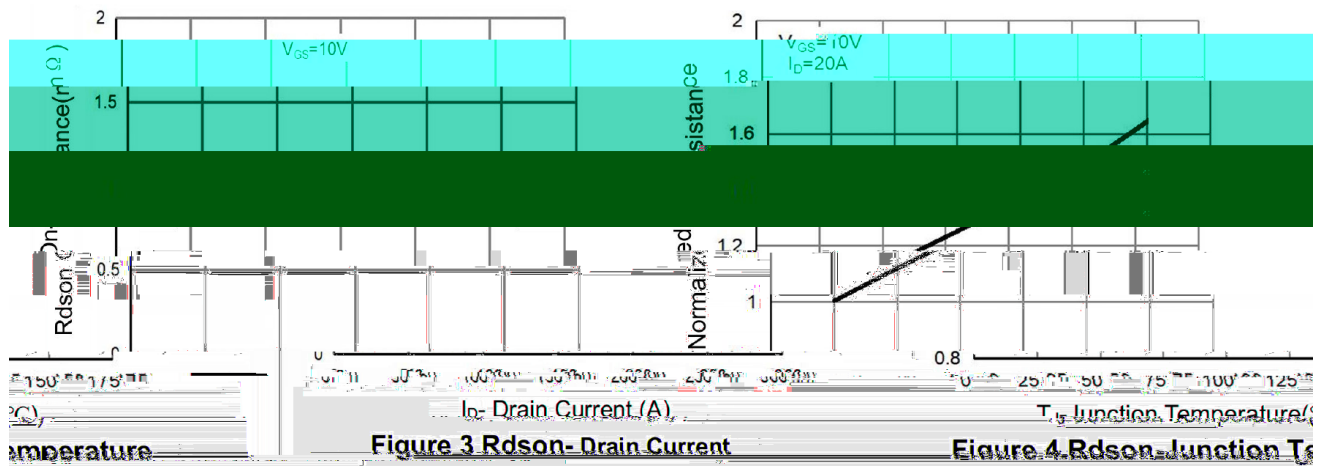
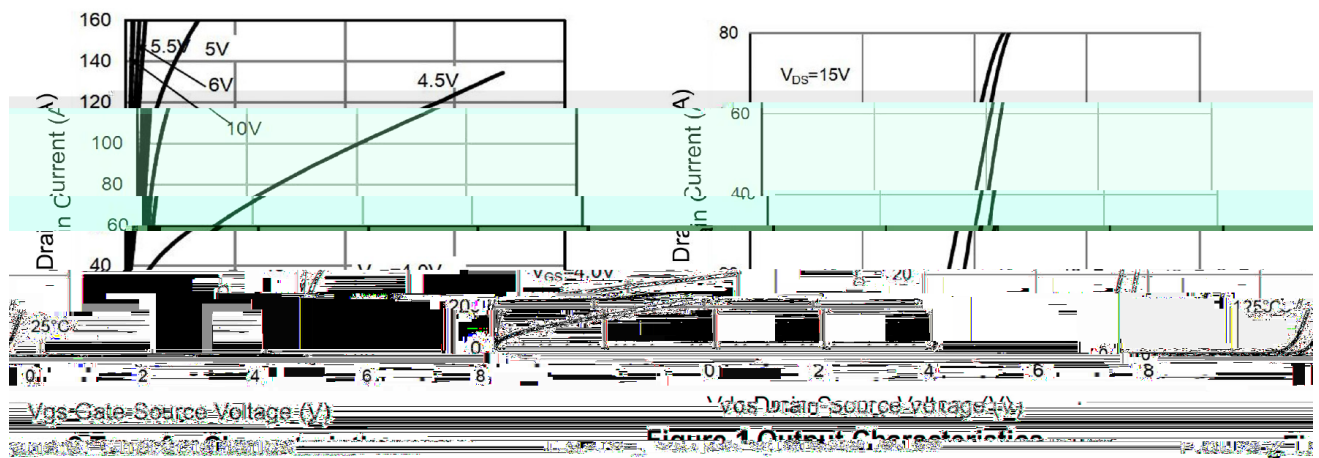


Figure 5 Gate Charge

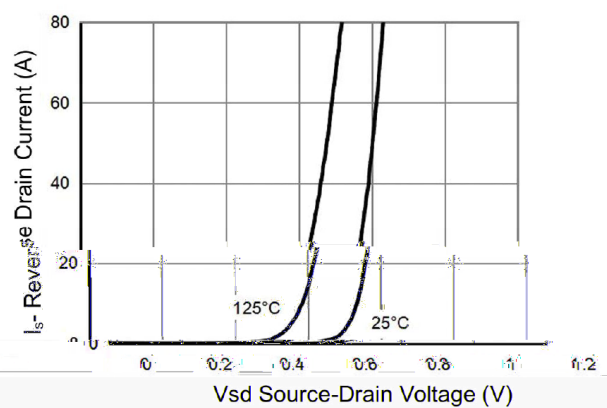
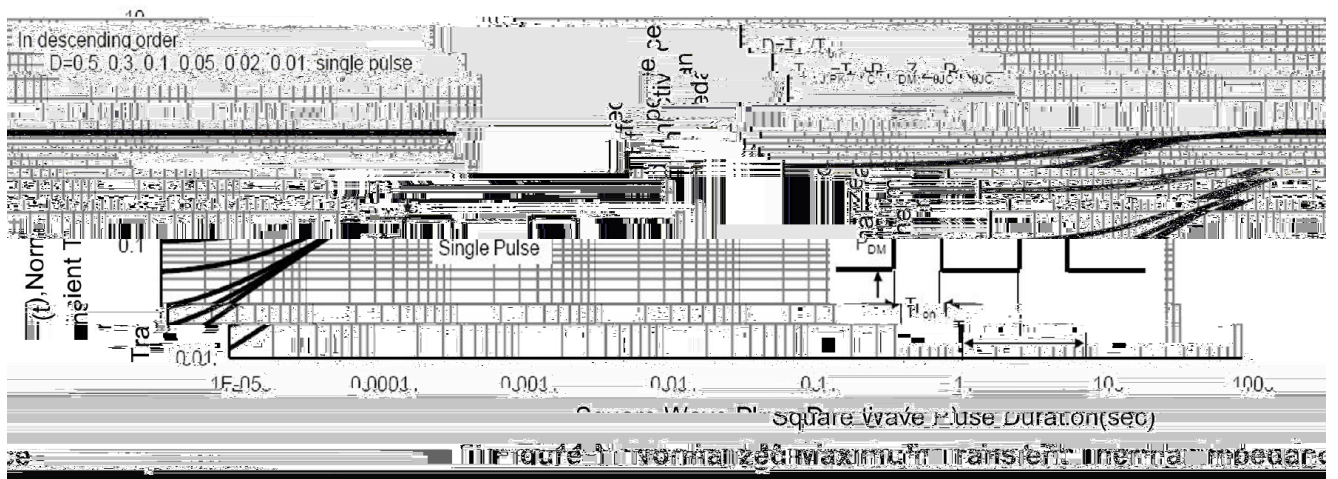
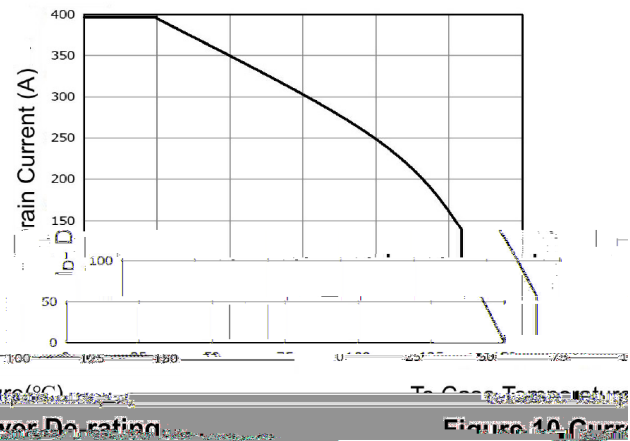
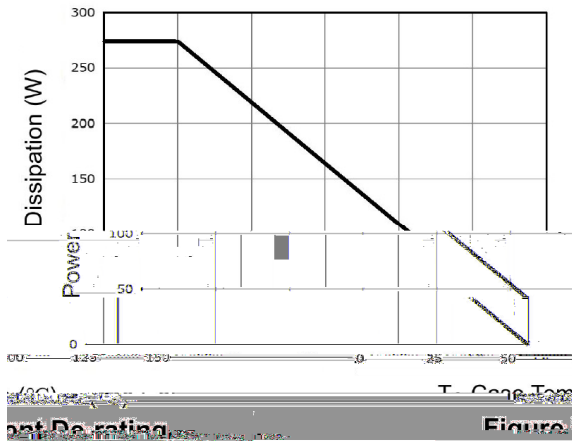
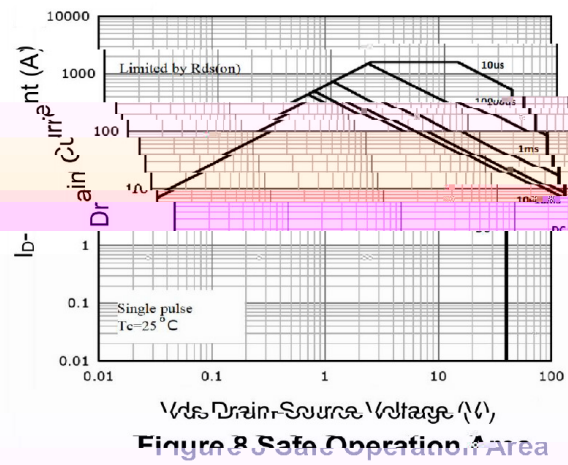
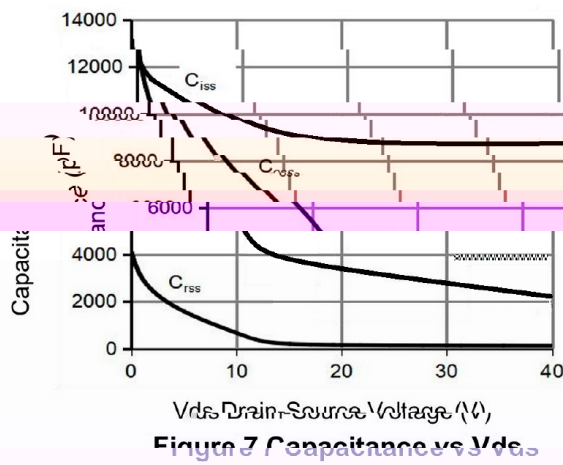
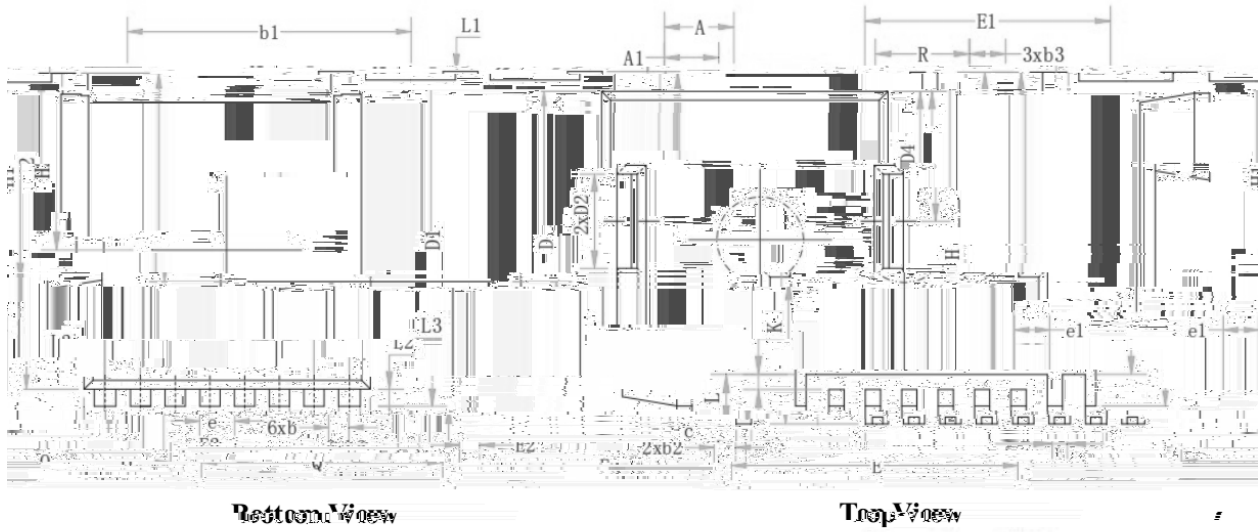
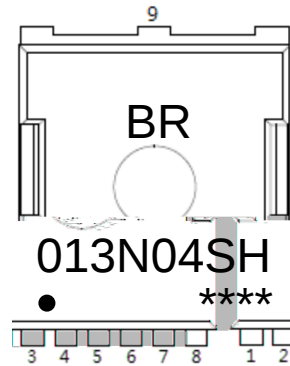


Figure 6 Source-Drain Diode Forward





Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	2.25	2.30	2.35	E	9.85	9.90	9.95
A1	1.75	1.80	1.85	E1	8.00	8.10	8.20
b	0.65	0.70	0.75	E2	0.65	0.70	0.75
b1	9.75	9.80	9.85	H1	11.60	11.70	11.80
b2	0.70	0.75	0.80	H2	6.95 BSC		
b3	1.15	1.20	1.25	H3	5.90 BSC		
c	0.45	0.50	0.55	K	3.10 REF		
D	10.35	10.40	10.45	L	1.55	1.65	1.75
D1	11.00	11.10	11.20	L1	0.65	0.70	0.75
D2	3.25	3.30	3.35	L2	0.50	0.60	0.70
D4	4.50	4.55	4.60	L3	0.40	0.50	0.60
e	1.20 BSC			Q	7.95 REF		
e1	1.225 BSC			R	3.00	3.10	3.20



013N04SH

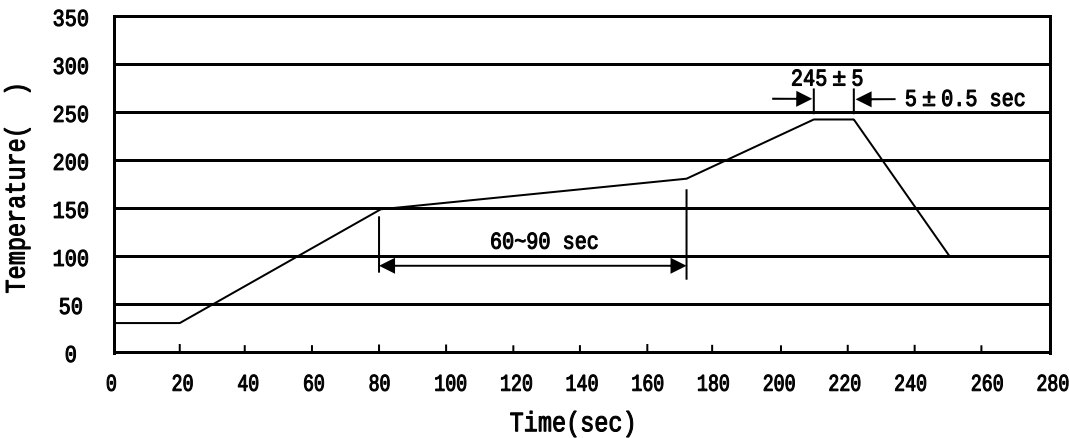
Note

BR Company Code

013N04SH Product Type Code

****: Lot No. Code, code change with Lot No.

Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 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.

260 5

10 1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

Package Type	Units					Dimension (unit mm ³)		
TOLL-8L	2,000	1	2,000	6	12,000	13"×24	360×360×50	380×335×366

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