TOLL-8L N

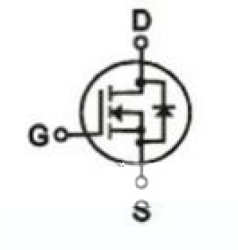
V_{DS}(V)=100V I_D=259A

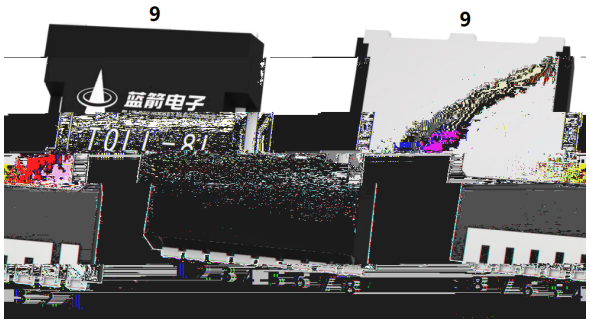
$R_{DS(ON)}$@10V≤2.0mΩ(Typ. 1.6mΩ)

HF Product.

DC/DC

DC/DC converter,Power switch,Motor drives.





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 - Continuous		I_D	259	A
Drain Current – Pulsed		I_{DM}	1036	A
Gate-Source Voltage		V_{GS}	20	V
Power Dissipation		P_{tot}	250	W
Single Pulse Avalanche Energy(V_{DD}=50V,L=0.1mH)		E_{AS}	205	mJ
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	
Thermal resistance, junction - ambient	Steady-State	$R_{\theta JA}$	40	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	0.5	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
	BV_{DSS}	I_D=250uA, V_{GS}=0V	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, 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	2.2	3.0	3.8	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=100A		1.6	2.0	m
Diode Forward Voltage	V_{SD}	I_S=100A, V_{GS}=0V		0.9	1.2	V
Gate Resistance	R_g	f=1.0MHz		1.2		
Input Capacitance	C_{iss}	V_{DS}=50V V_{GS}=0V f=1.0MHz		10120		pF
Output Capacitance	C_{oss}			1360		
Reverse Transfer Capacitance	C_{rss}			50		
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V I_{DS}=100A		176		nC
Gate Source Charge	Q_{gs}			47		
Gate Drain Charge	Q_{gd}			54		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=50V R_G=6 I_D=100A		85		ns
Turn-On Rise Time	t_r			137		
Turn-Off Delay Time	$t_{d(off)}$			92		
Turn-Off Fall Time	t_f			98		
Reverse Recovery Time	t_{rr}	I_F = 50 A, V_{DS} = 50 V dI_{SD}/dt = 100 A/ s		79		ns
Reverse Recovery Charge	Q_{rr}			180		nC

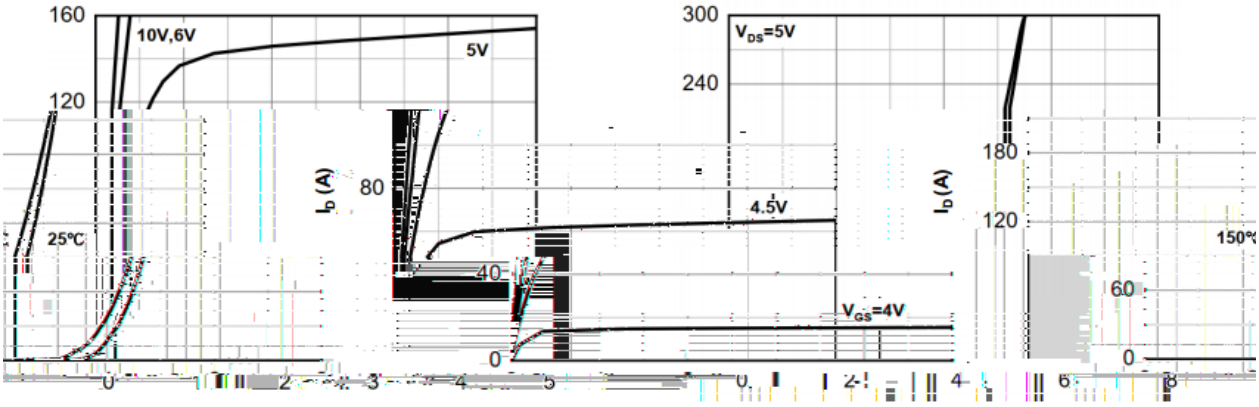


Figure 1: On-Region Characteristics

Figure 2: Transfer Characteristics

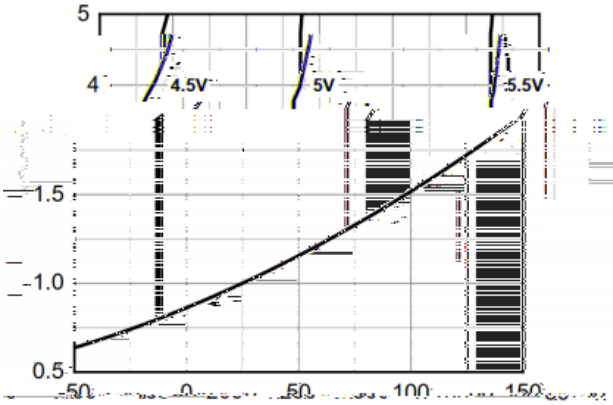


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

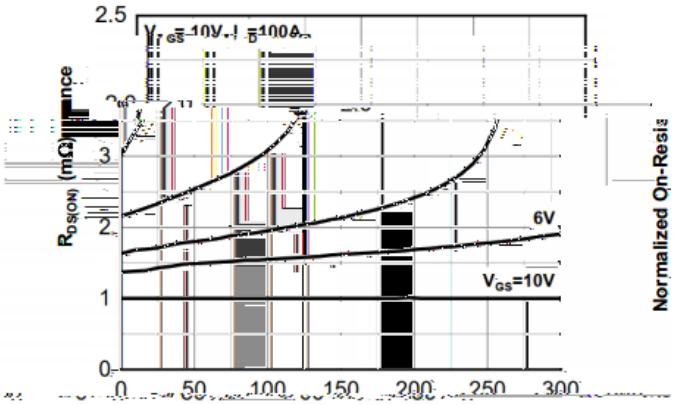


Figure 4: On-Resistance vs. Junction Temperature

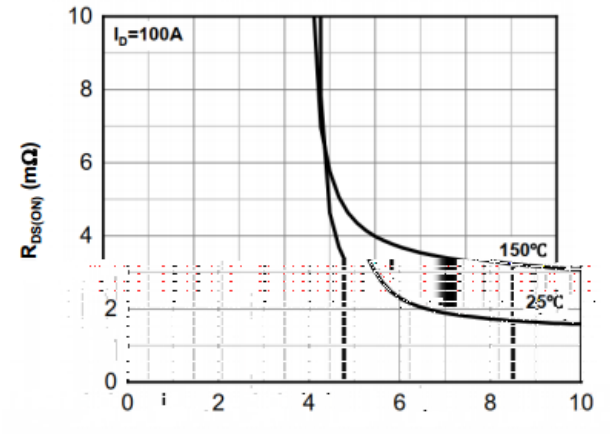


Figure 5: On-Resistance vs. Gate-Source Voltage

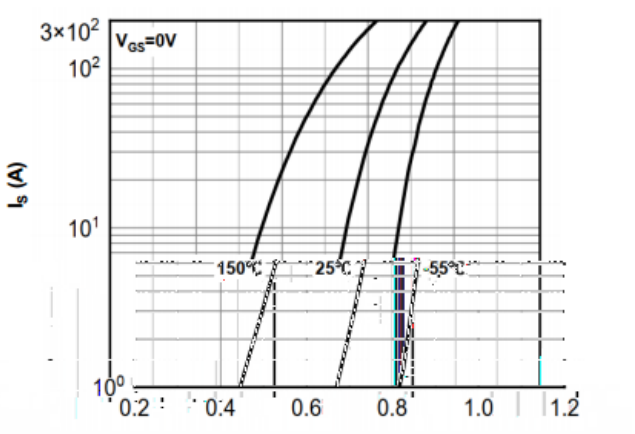
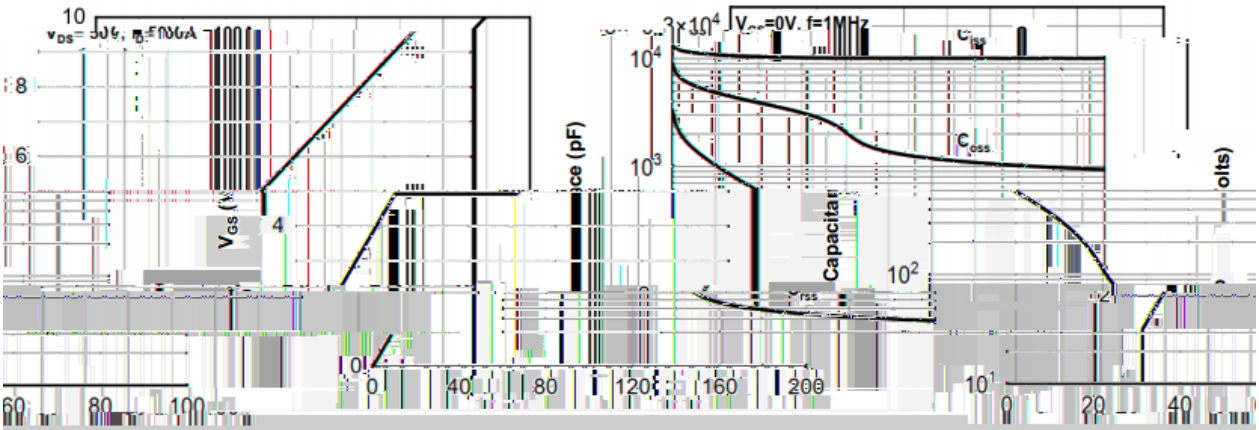
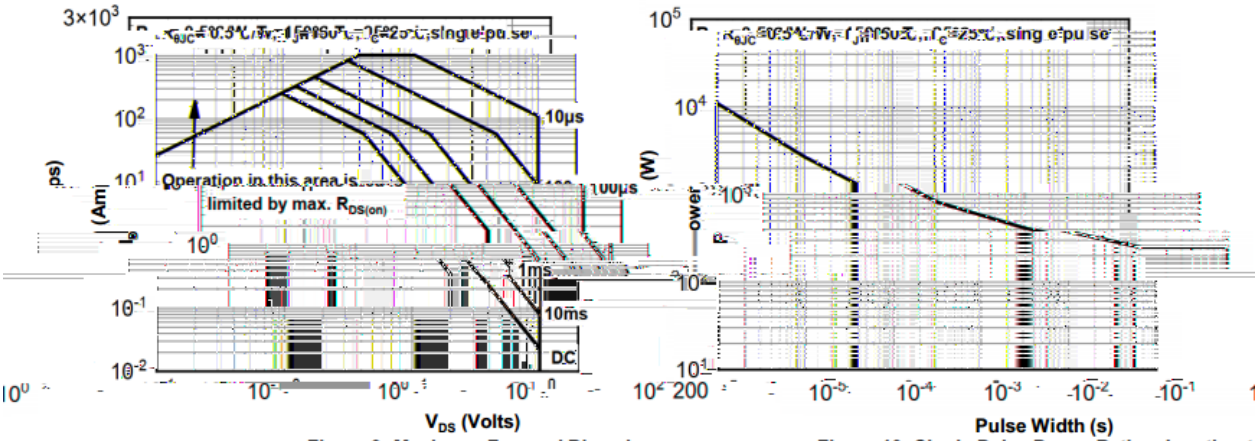
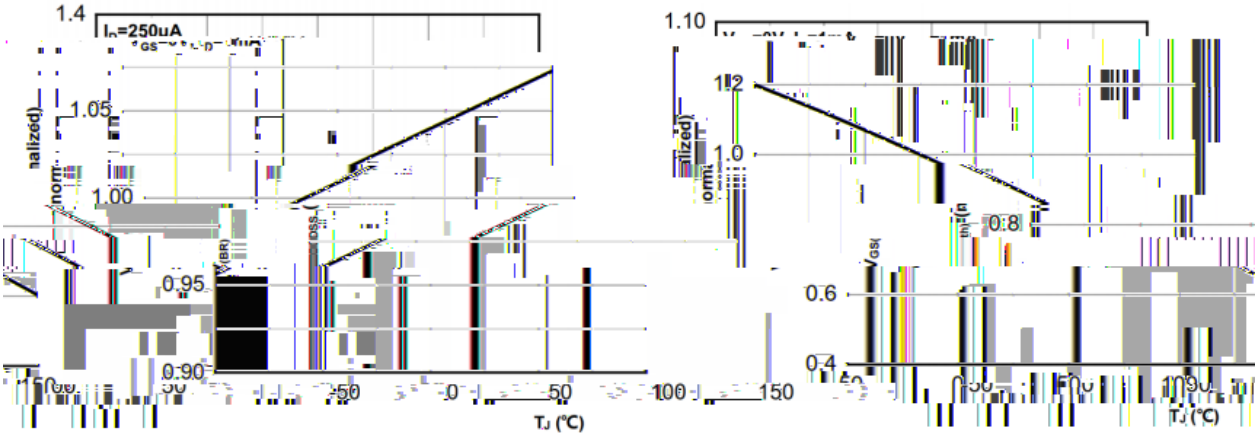


Figure 6: Body-Diode Characteristics


Volts)
nce Characteristics
Q_g (nC)
Figure 7: Gate-Charge Characteristics
Figure 8: Capacita


Operation in this area is limited by max. R_DS(on)
10µs
100µs
1ms
10ms
DC
V_DS (Volts)
Figure 9: Maximum Forward Biased Safe Operating Area
Pulse Width (s)
Figure 10: Single Pulse Power Rating Junction-t Case


I_D=250uA
T_J (°C)
(th) vs. Junction
Figure 12: Normalized V(BR)DSS vs. Junction Temperature
Figure 11: Normalized VGS Temperature

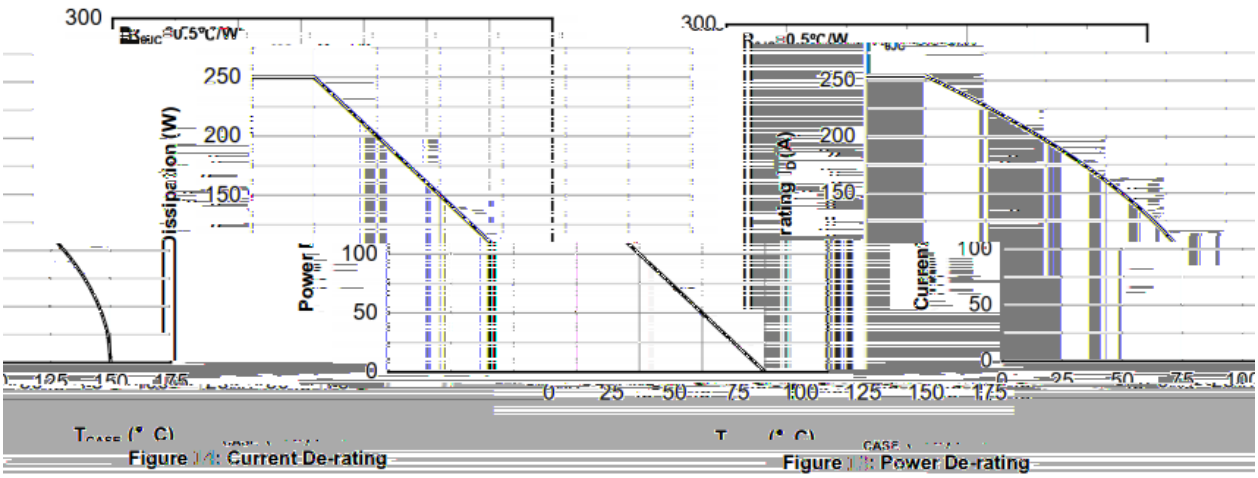
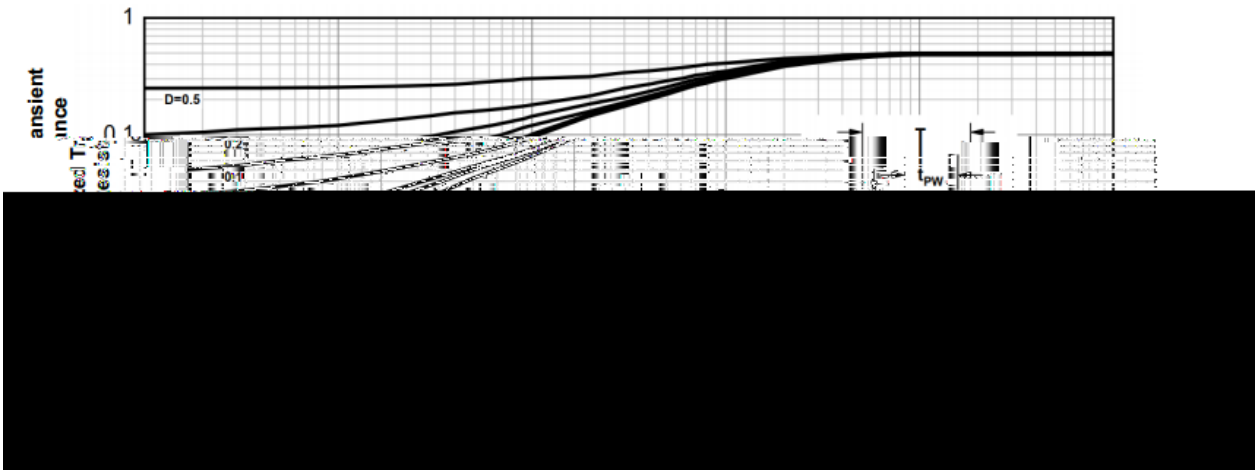
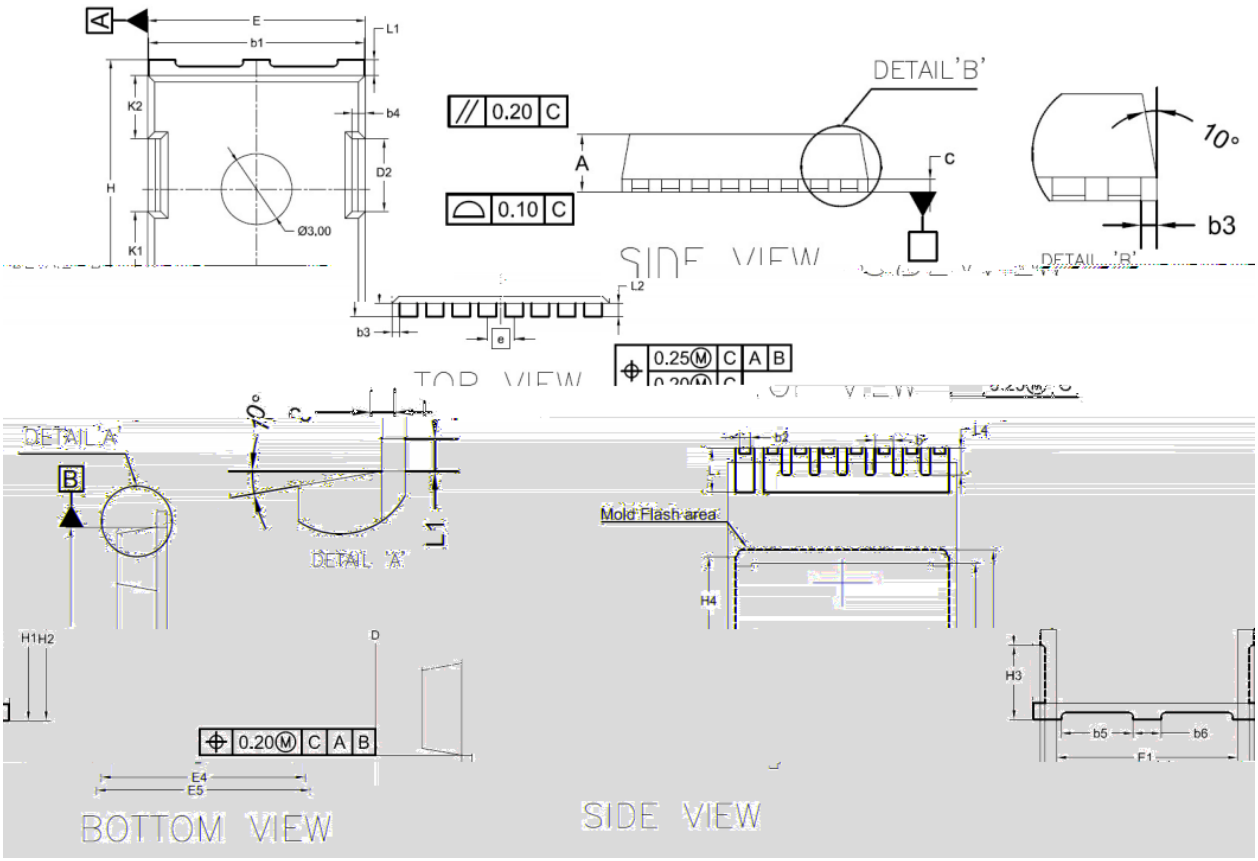


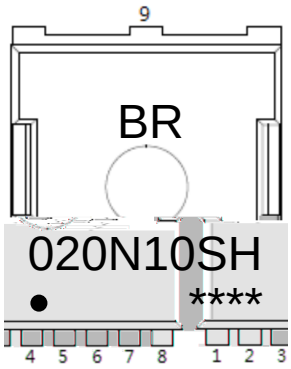
Figure 14: Current De-rating

Figure 15: Power De-rating





Symbol	Dimensions In Millimeters			Symbol	Dimensions In Millimeters		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.

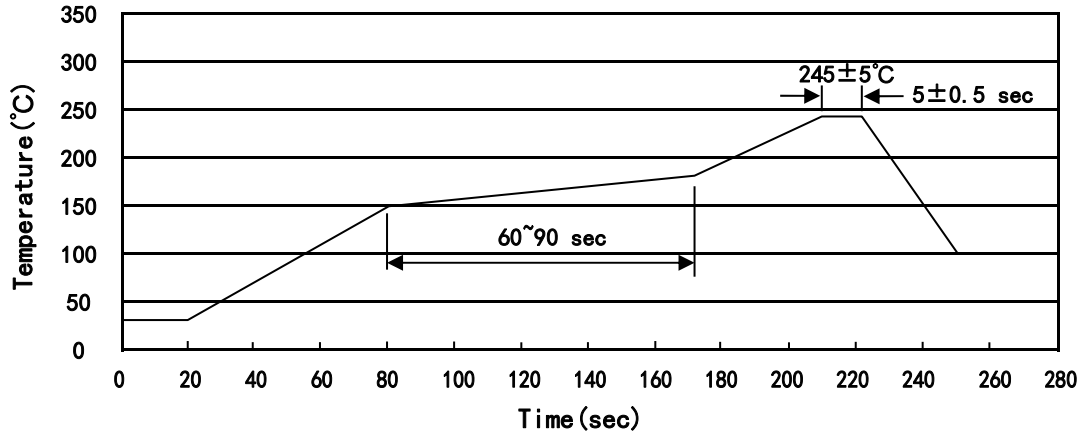


020N10SH

Note

BR	Company Code
020N10SH	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 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