/ Descriptions

TO-263 N

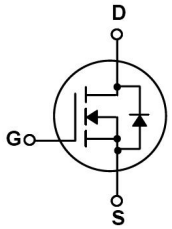
N-CHANNEL MOSFET in a TO-263 Plastic Package.

/ Features

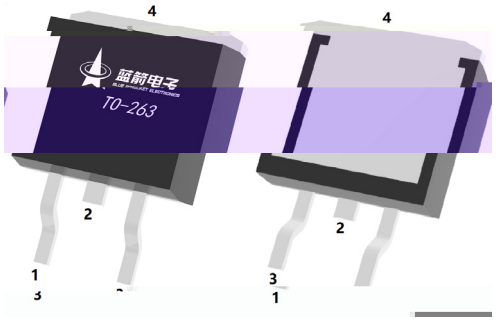
/ Applications

High frequency switching and synchronous rectification,BMS,Motor.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 4 D PIN 3 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	100	V
Drain Current		I_D(Tc=25℃)	212	A
Pulsed Drain Current		I_{DM}	445	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	1000	mJ
Avalanche Current		I_{AS}	50	A
Total Power Dissipation		P_D(Tc=25℃)	260	W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	t≤10s	$R_{\theta JA}$	13	/W
	Steady-State		58	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	0.48	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	100	109		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V	V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	2	3	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=20A		2.8	3.2	mΩ
	$R_{DS(on)}$	V_{GS}=6V	I_D=10A		3.8	5.5	
Forward On Voltage	V_{SD}	V_{GS}=0V	I_S=1A			1.2	V
Gate resistance	R_g	f=1MHz			1.3		Ω
Input Capacitance	C_{iss}	V_{DS}=25V f=1MHz	V_{GS}=0V		9180		pF
Output Capacitance	C_{oss}				3240		
Reverse Transfer Capacitance	C_{rss}				305		
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, I_D=20A	V_{DS}=50V,		76		nC
Gate Source Charge	Q_{gs}				20		
Gate Drain Charge	Q_{gd}				12		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=50V R_L=2.5Ω R_{GEN}=3Ω		23		ns
Turn-On Rise Time	t_r			17		
Turn-Off Delay Time	$t_{d(off)}$			50		
Turn-Off Fall Time	t_f			21		

/ Electrical Characteristic Curve

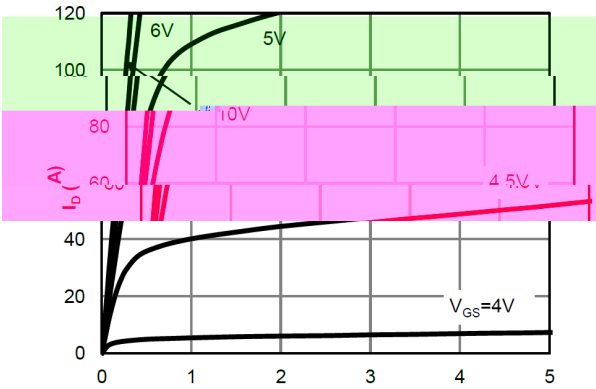


Figure 1: On-Region Characteristics

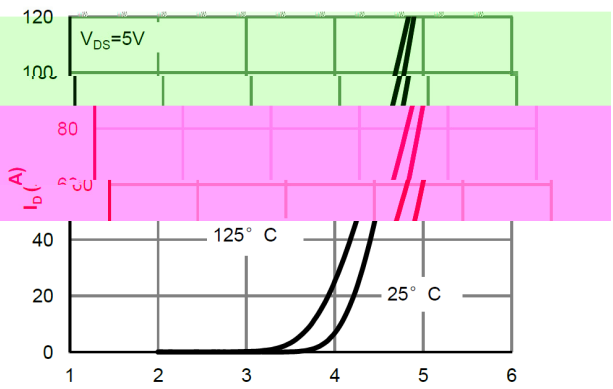


Figure 2: Transfer Characteristics

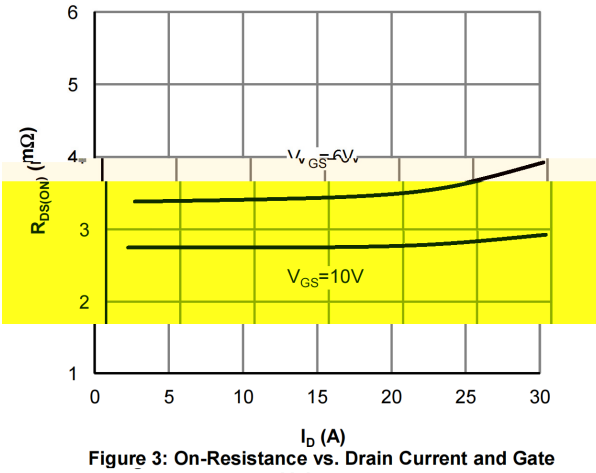


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

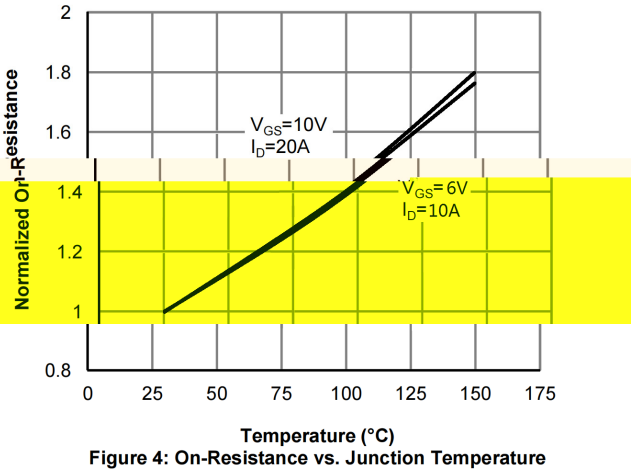


Figure 4: On-Resistance vs. Junction Temperature

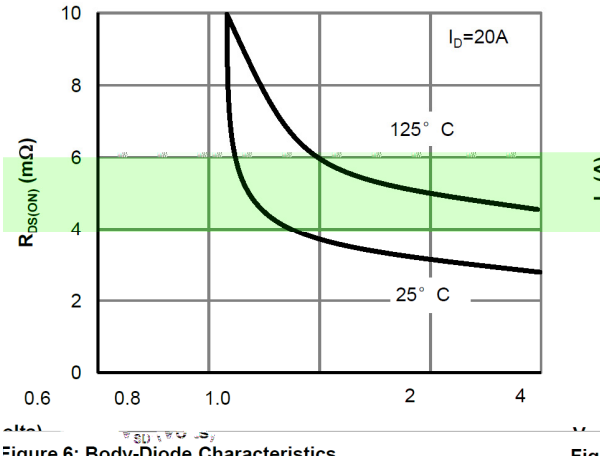


Figure 6: Body-Diode Characteristics

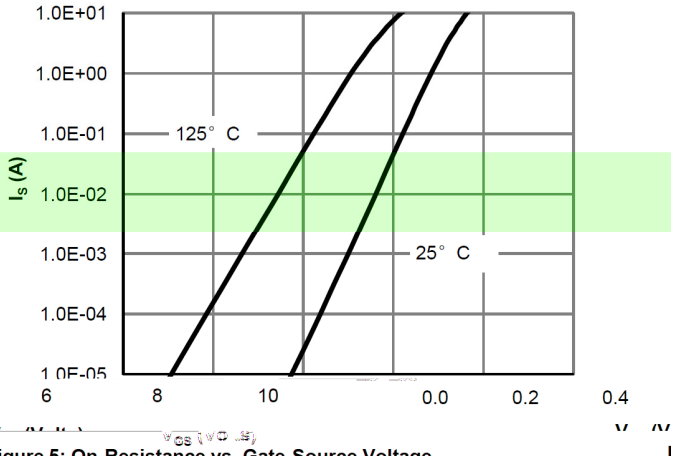


Figure 5: On-Resistance vs. Gate-Source Voltage

/ Electrical Characteristic Curve

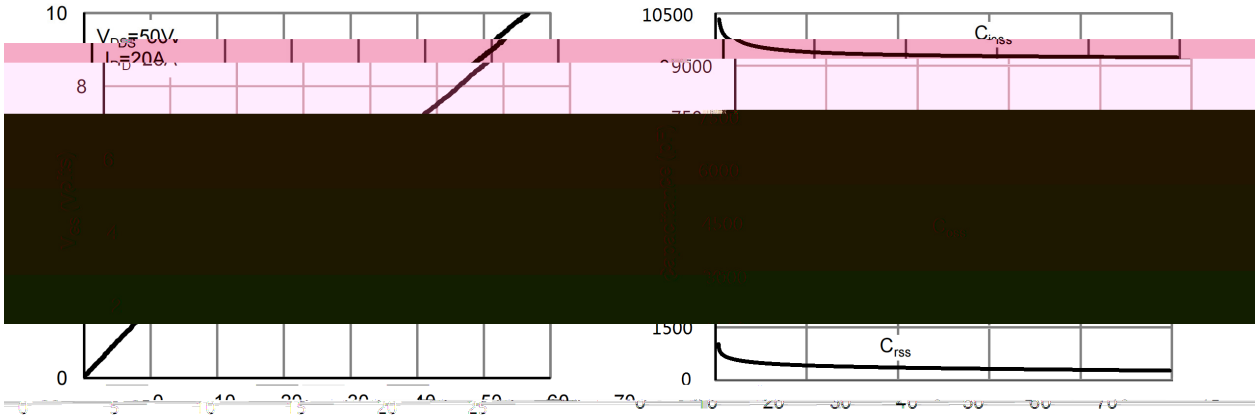


Figure 8: Capacitance Characteristics

Figure 7: Gate Charge Characteristics

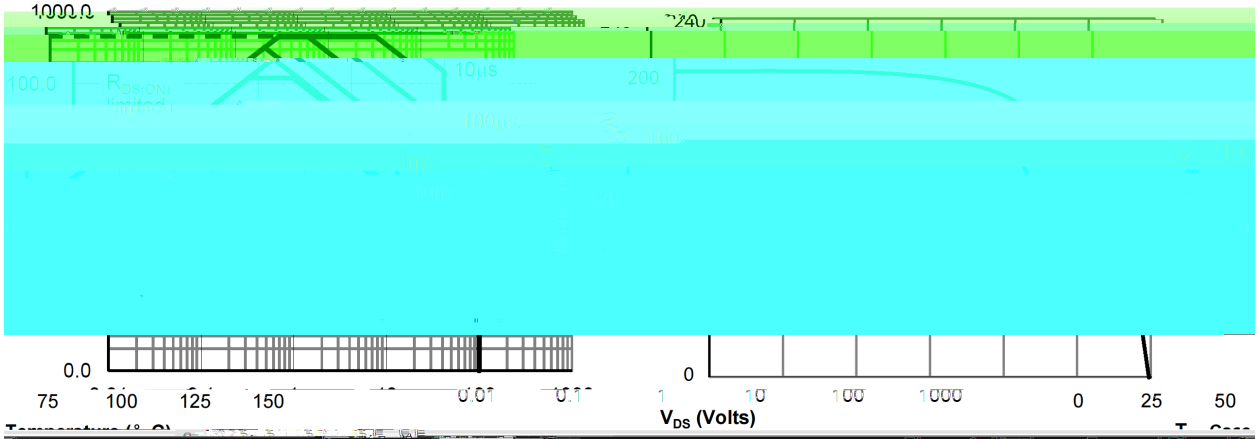
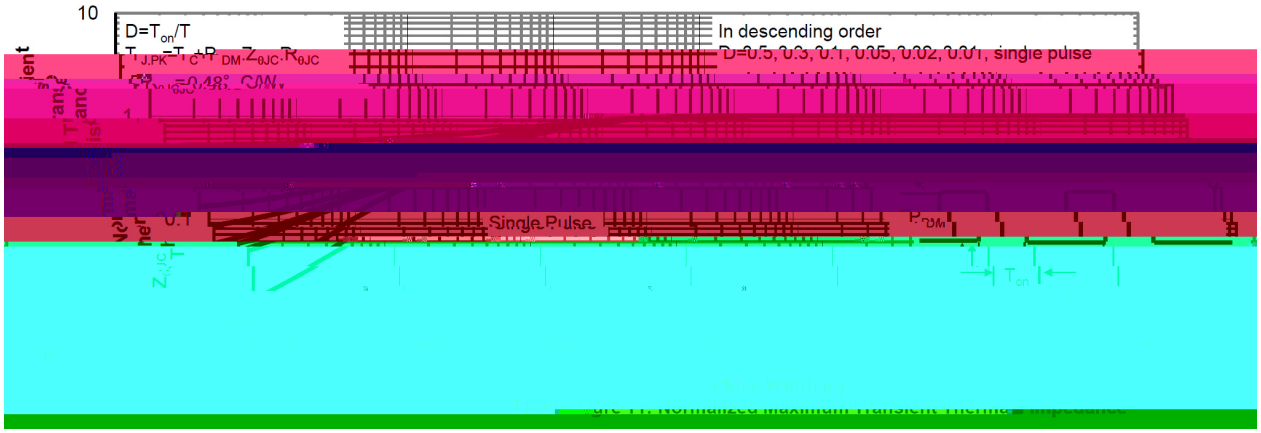
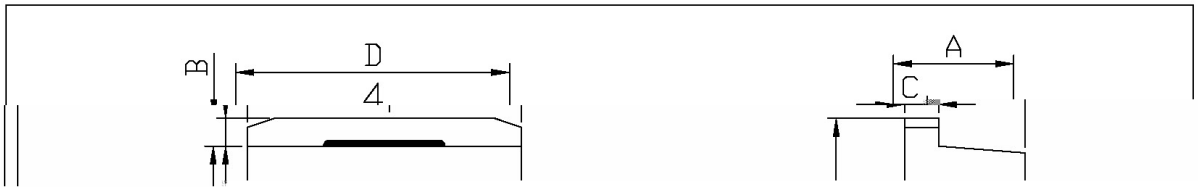


Figure 10: Maximum Continuous Drain Current vs Case Temperature

Figure 9: Maximum Forward Biased Safe Operating Area



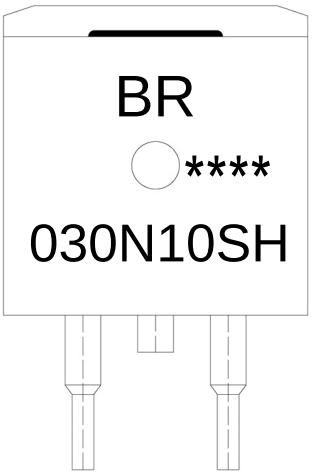
/ Package Dimensions



单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.30	4.70	E	9.90	9.40
B	1.00	1.40	e1	2.34	2.7
b	0.70	0.90	e2	4.88	5.28
b1	1.15	1.35	L1	15.00	16

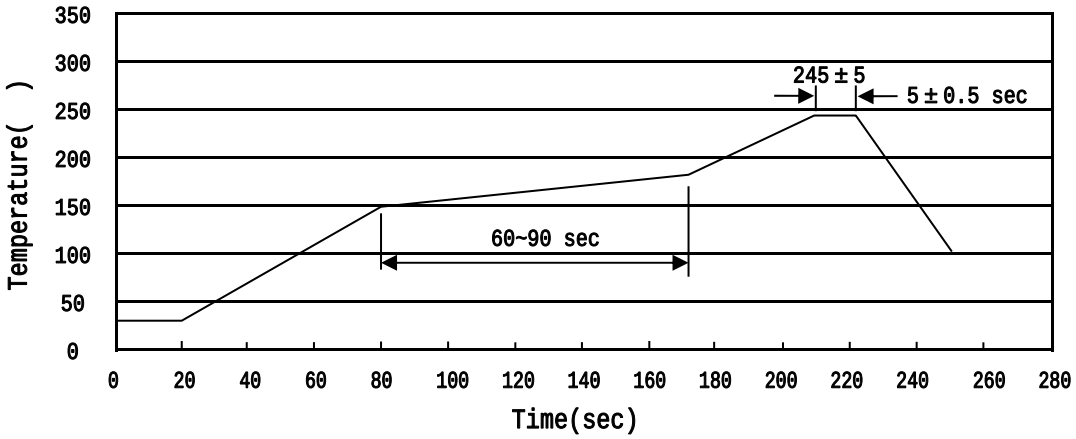
/ Marking Instructions



Note:

BR:	Company Code
030N10SH:	Product Type
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



1	150 180 60 90sec;	Note: 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.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit：mm³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-263	800	1	800	6	4,800	13″ ×24	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit：mm³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-263	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

/ Notices