TO-263 N

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

These devices are well suited for high efficient switched mode power supplies，Active power factor

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	40	V
Drain Current		I_D(Tc=25℃)	196	A
Pulsed Drain Current		I_{DM}	500	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	561.8	mJ
Avalanche Current		I_{AS}	26.5	A
Total Power Dissipation		P_D(Tc=25℃)	347	W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	t≤10s	$R_{\theta JA}$	15	/W
	Steady-State		60	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	0.36	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=40V V_{GS}=0V			1	A
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=250 A	1	1.7	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		4.5	5	m
		V_{GS}=4.5V I_D=10A		7	10	
Forward On Voltage	V_{SD}	V_{GS}=0V I_S=1A			1.2	V
Gate resistance	R_g	f=1MHz		2.3		
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1MHz		2950		pF
Output Capacitance	C_{oss}			210		
Reverse Transfer Capacitance	C_{rss}			190		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g(10V)	V_{GS}=10V V_{DS}=20V I_D=20A		70		nC
Total Gate Charge	Q_g(4.5V)			15		
Gate Source Charge	Q_{gs}			15		
Gate Drain Charge	Q_{gd}			22		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=20V R_L=1 R_{GEN}=3		15		ns
Turn-On Rise Time	t_r			30		
Turn-Off Delay Time	$t_{d(off)}$			54		
Turn-Off Fall Time	t_f			20		

/ Electrical Characteristic Curve

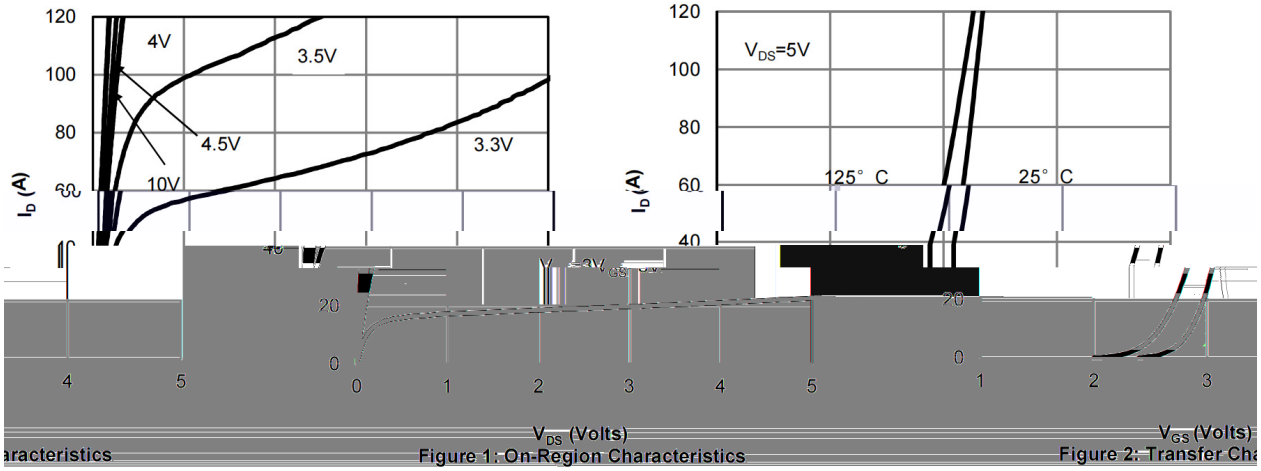


Figure 1: On-Region Characteristics

Figure 2: Transfer Cha

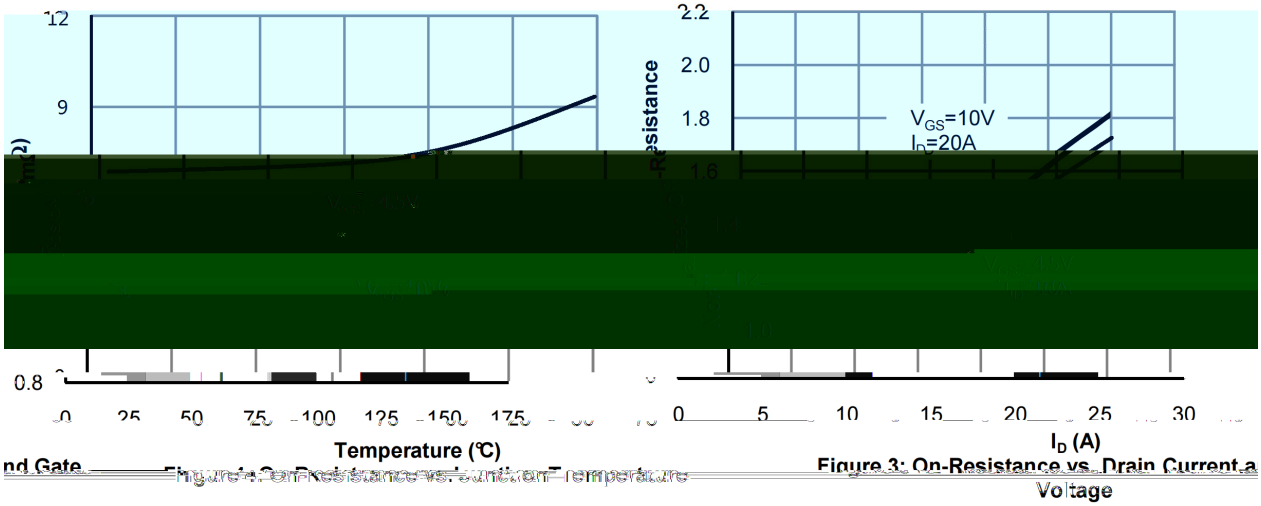


Figure 3: On-Resistance vs. Drain Current a Voltage

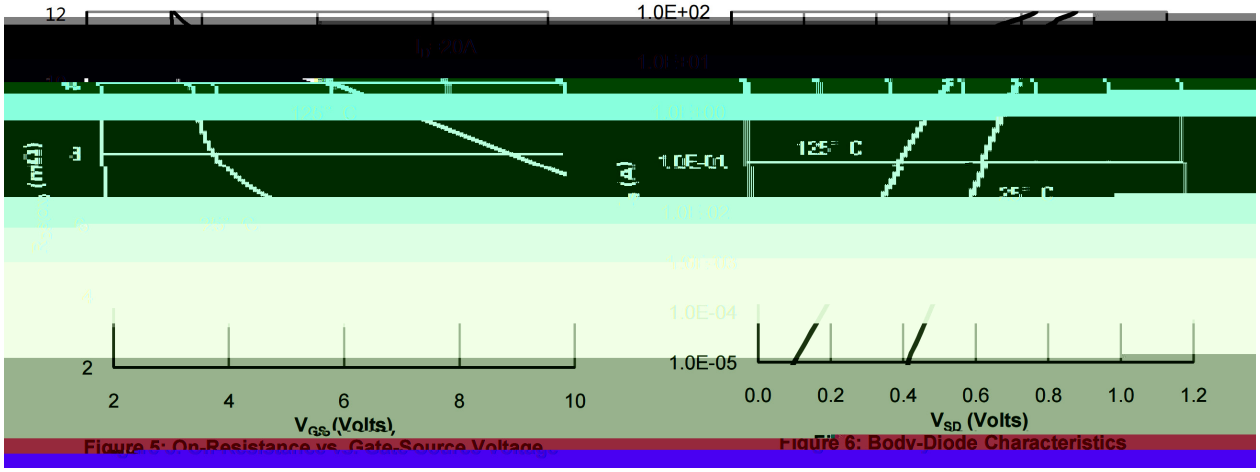
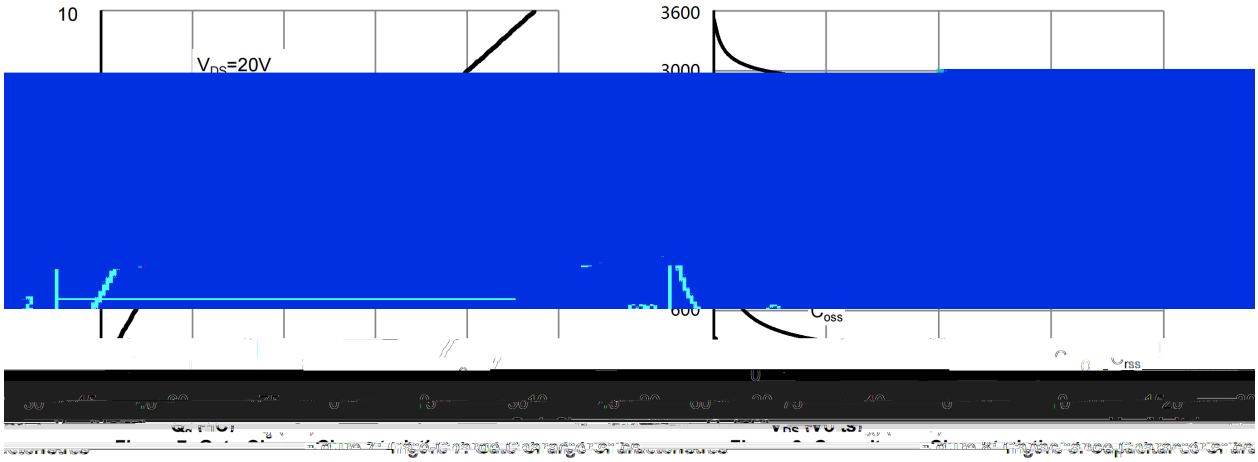


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve



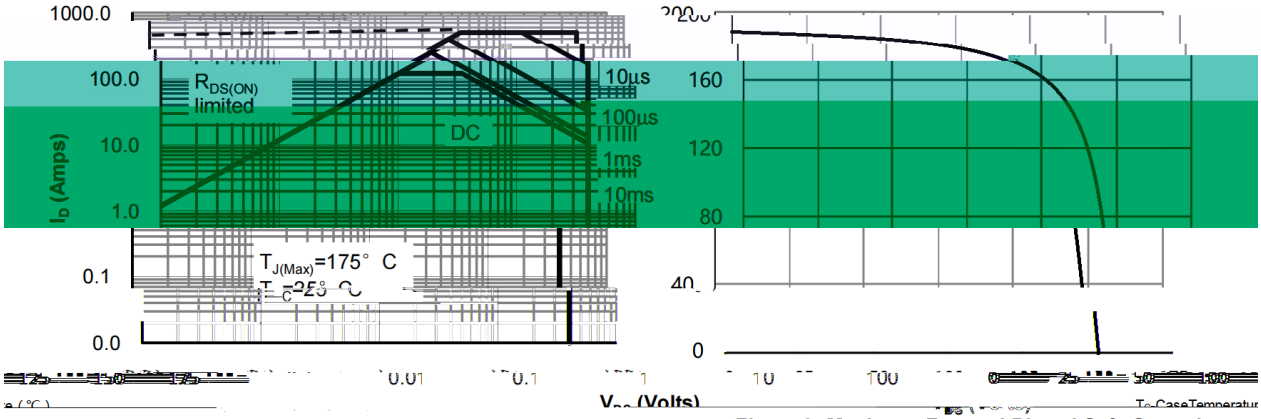


Figure10. Maximum Continuous Drain Current

Figure 9: Maximum Forward Biased Safe Operating Area

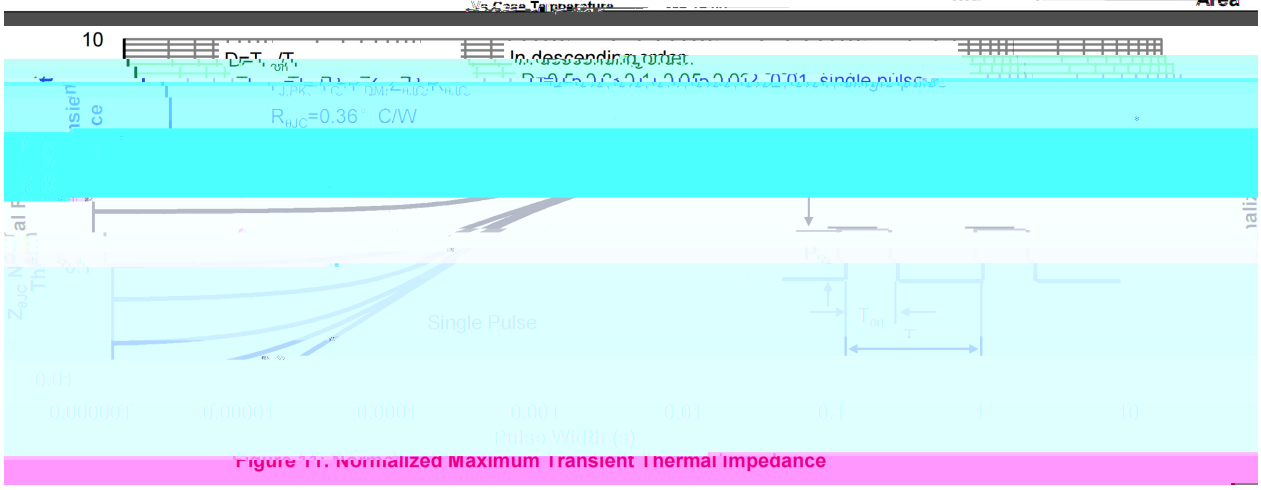
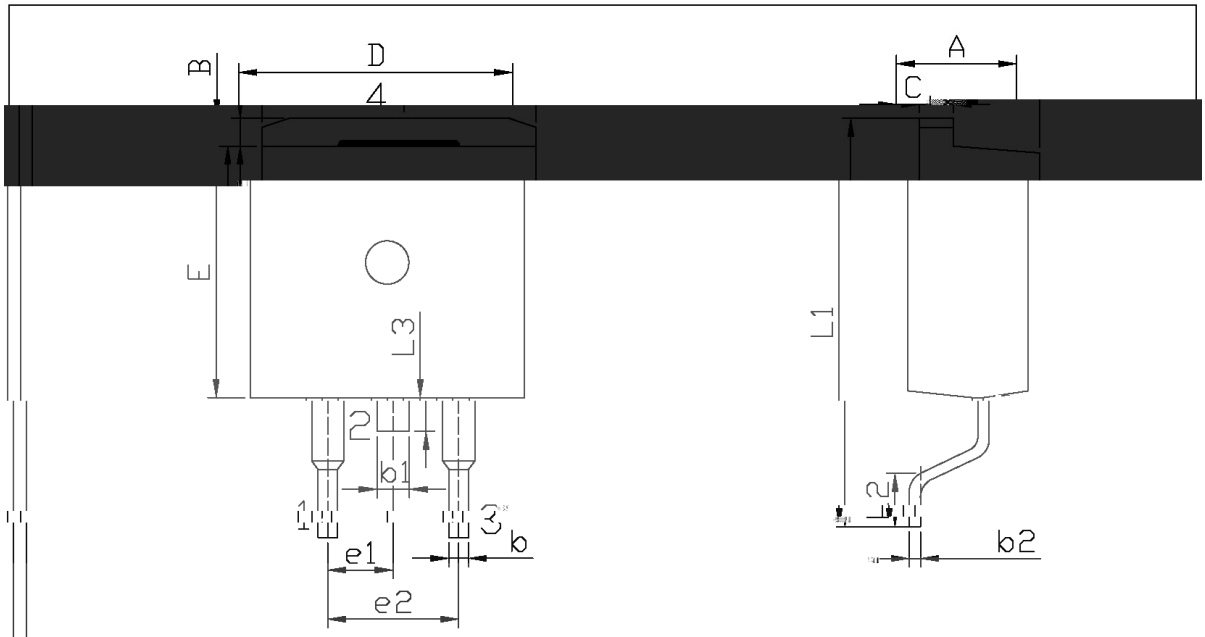


Figure 11. Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

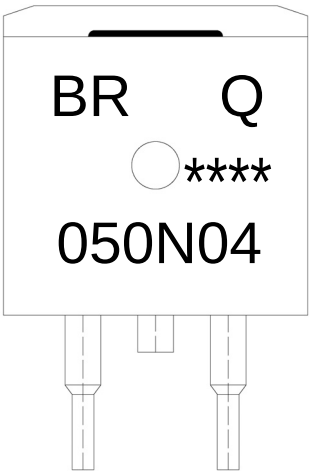


单位：mm

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		

TO-263

/ Marking Instructions

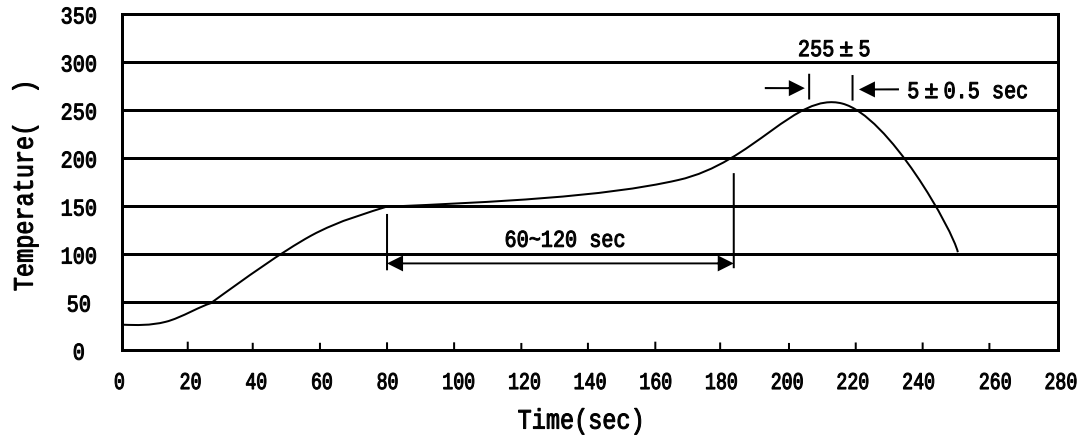


Q

Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
050N04:	Product Type
****:	Lot No. Code, code change with Lot No

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



Note:

1	150 200 60 120sec;	1.Preheating:150~200 , Time:60~120sec.
2	255 5 5 0.5sec;	2.Peak Temp.:255 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	Units					Dimension		(unit：mm³)
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-263	800	1	800	6	4,800	13″ ×24	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension		(unit：mm³)
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-263	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

/ Notices