

描述 / Descriptions

N 沟道 TO-263 塑封封装场效应管。

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

特征 / Features

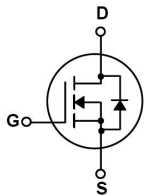
$R_{DS(on)}$ 小, 栅极电荷低, 快速开关特性, 无卤产品。

Low $R_{DS(on)}$, Low Gate Charge, Fast Switching, Halogen-free Product.

用途 / Applications

用于 AC-DC 开关电源, DC-DC 电源转换器, 高压 H 桥 PWM 马达驱动。

Suited for AC-DC Power switch, DC-DC Power converter, High Voltage H-Bridge PWM Motor Drive.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN1 : G

PIN 2、4 : D

PIN 3 : S

放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V _{DSS}	60	V
Drain Current ^G		I _D (Tc=25℃)	80	A
		I _D (Tc=100℃)	65.6	A
Drain Current - Pulsed ^C		I _{DM}	240	A
Gate-Source Voltage		V _{GS}	±20	V
Single Pulsed Avalanche Energy(L=0.5mH)		E _{AS}	215	mJ
Avalanche Current		I _{AS}	23.2	A
Power Dissipation ^B		P _D (Tc=25℃)	175	W
		P _D (Tc=100℃)	67	W
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to 150	℃
Maximum Junction-to-Ambient ^A	Steady-State	R _{θJA}	62	℃/W
Maximum Junction-to-Case ^B	Steady-State	R _{θJC}	0.7	℃/W

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1	μA
		$V_{DS}=60V$ $T_J=55^{\circ}C$			10	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1	1.7	2.5	V
Total gate charge	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=60A$		11	13	mΩ
		$V_{GS}=4.5V$ $I_D=30A$		16	20	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$		0.67	1.5	V

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		2570		pF
Output Capacitance	C_{oss}			152		
Reverse Transfer Capacitance	C_{rss}			74		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		1.2		Ω
Total Gate Charge	$Q_g(10V)$	$V_{GS}=-10V$ $V_{DS}=30V$ $I_D=20A$		20.6		nC
Total Gate Charge	$Q_g(4.5V)$			8.5		
Gate Source Charge	Q_{gs}			5		
Gate Drain Charge	Q_{gd}			2.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_L=1.5\Omega$ $R_{GEN}=3\Omega$		8.5		ns
Turn-On Rise Time	t_r			3.5		
Turn-Off Delay Time	$t_{d(off)}$			27		
Turn-Off Fall Time	t_f			3		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=20A$ $dI/dt=500A/ms$		19		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=20A$ $dI/dt=500A/ms$		69.5		nC

电参数曲线图 / Electrical Characteristic Curve

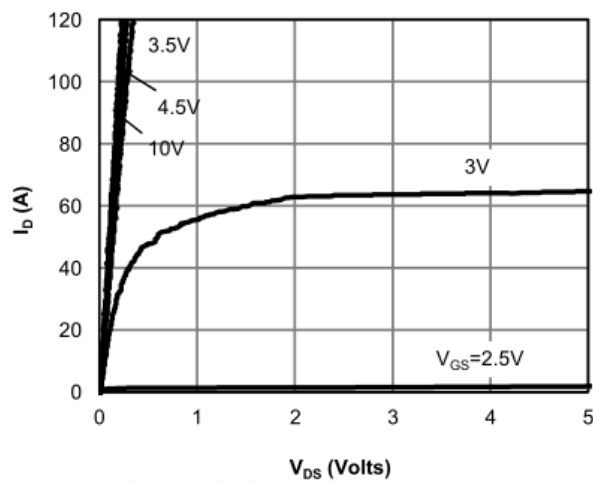


Figure 1: On-Region Characteristics

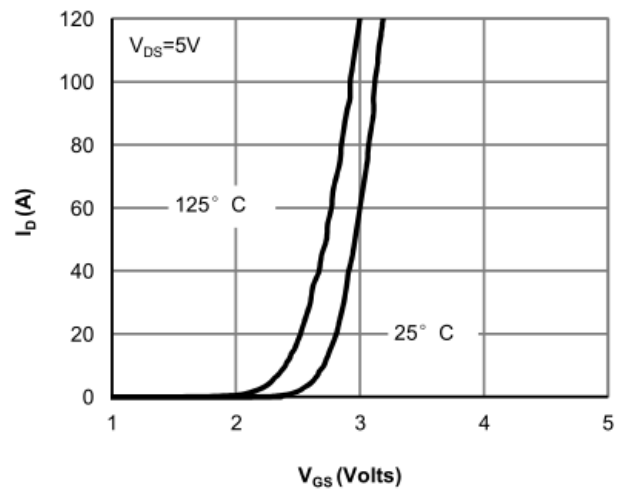


Figure 2: Transfer Characteristics

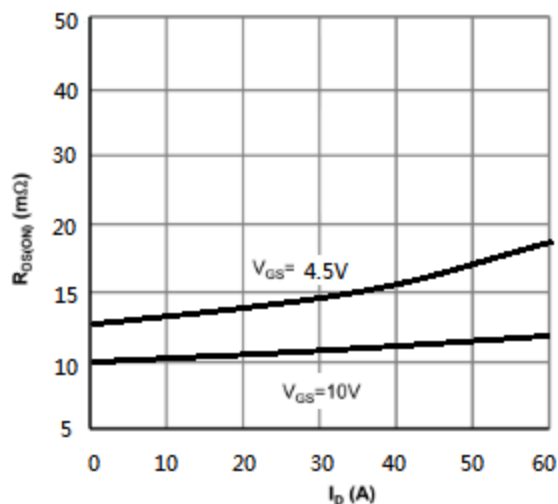


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

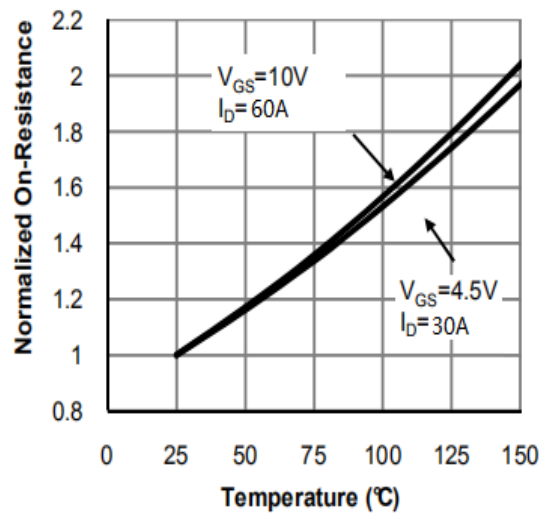


Figure 4: On-Resistance vs. Junction Temperature

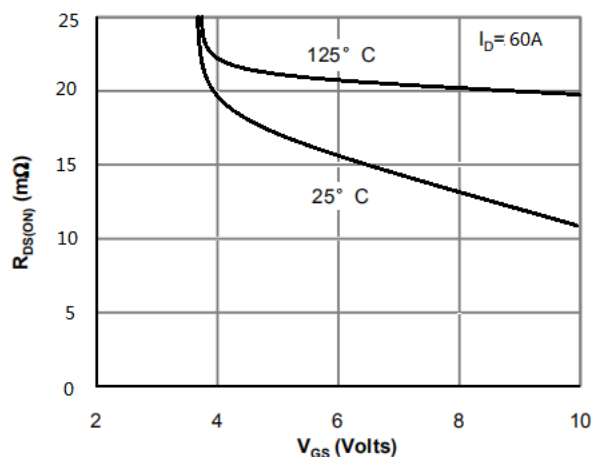


Figure 5: On-Resistance vs. Gate-Source Voltage

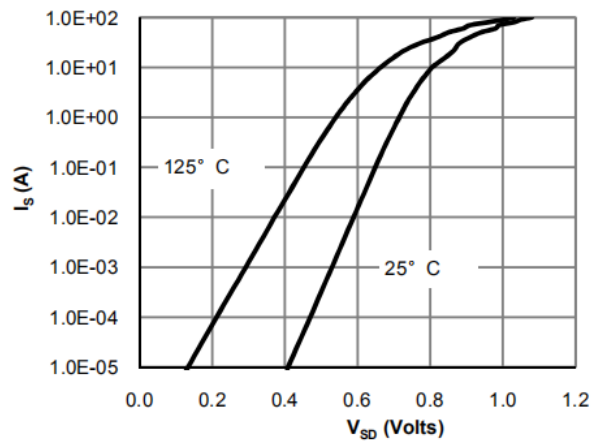
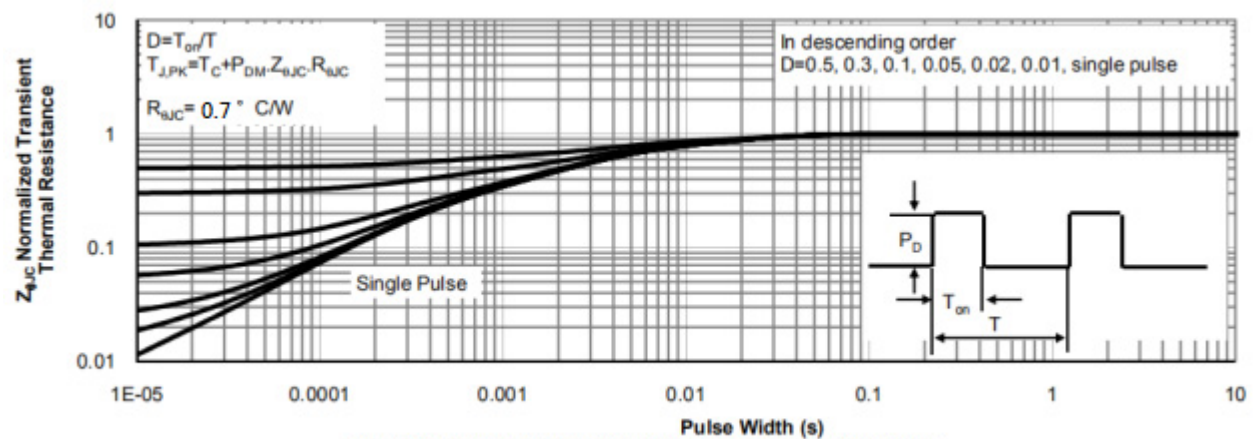
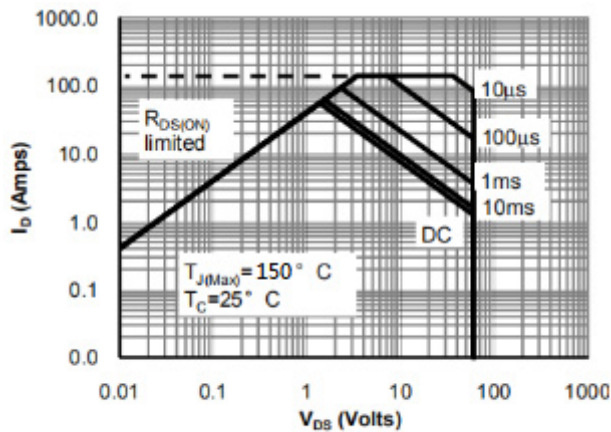
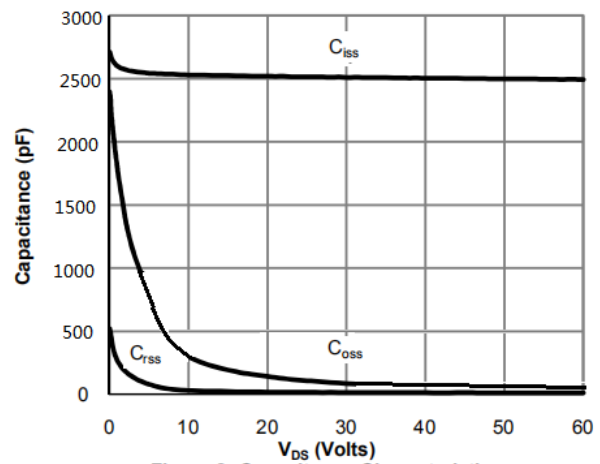
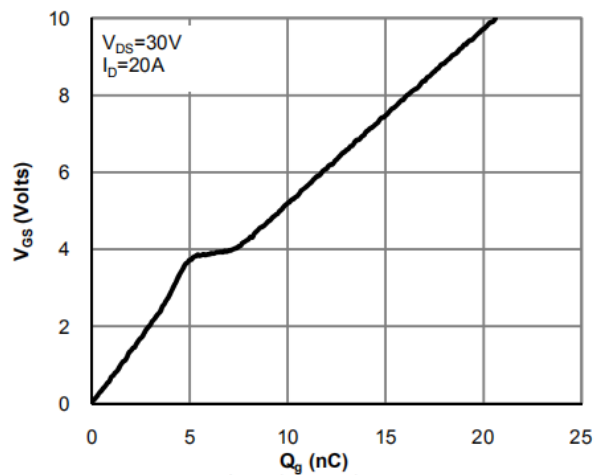
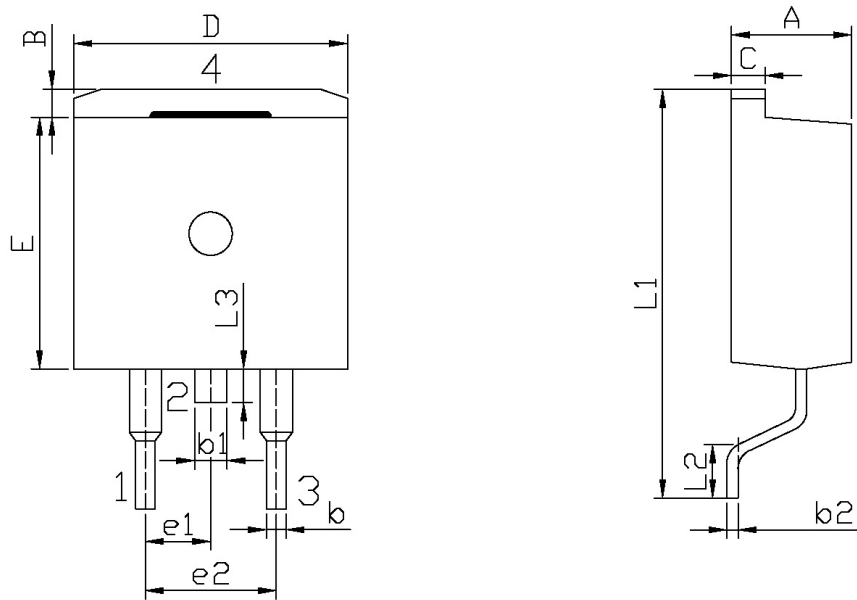


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

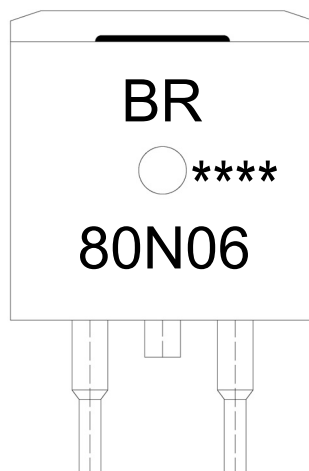


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.30	4.70	E	9.00	9.40
B	1.00	1.40	e1	2.34	2.74
b	0.70	0.90	e2	4.88	5.28
b1	1.15	1.35	L1	15.00	16.00
b2	0.40	0.60	L2	2.24	2.84
C	1.20	1.40	L3	1.20	1.60
D	9.80	10.20			

T□-263

印章说明 / Marking Instructions



说明：

BR： 为公司代码

80N06： 为型号代码

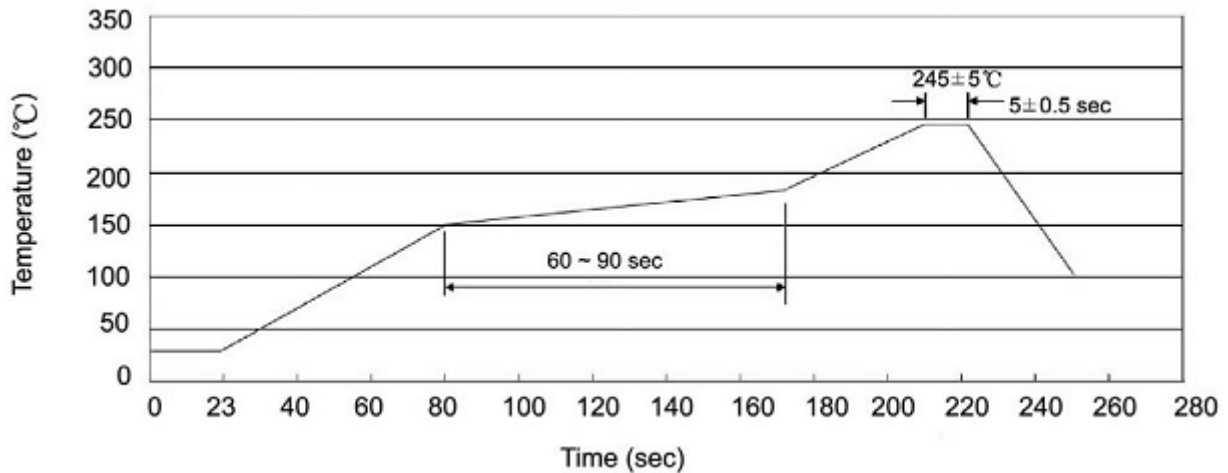
****： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code

80N06: Product Type.

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

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)


说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	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	5	4,000	13" x24	360×360×50	385×257×392

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	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

使用说明 / Notices