

/ Descriptions

TO-263 塑封封装 N 沟道场效应管。

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

/ Features

低电阻,开关速度快,无卤产品。

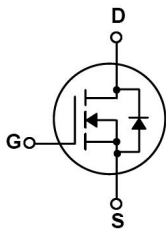
Ultra Low On-Resistance,fast switching,Halogen-free Product.

/ Applications

该器件适用于高效电源模块,主动式 PFC 电路和基于半桥拓扑结构的电子节能灯。

These devices are well suited for high efficient switched mode power supplies, Active power factor correction, electronic lamp ballast based on half bridge topology.

/ Equivalent Circuit



/ Pinning



PIN1 : G

PIN 2、 4 : D

PIN 3 : S

/ h_{FE} Classifications & Marking

见印章说明。 See Marking Instructions.



/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DSS}	60	V	
Drain Current	$I_D(Tc=25^{\circ}C)$	140	A	
Pulsed Drain Current	I_{DM}	330	A	
Gate-Source Voltage	V_{GS}	± 20	V	
Single Pulsed Avalanche Energy L=0.5mH	E_{AS}	191	mJ	
Avalanche Current	I_{AS}	27	A	
Total Power Dissipation	$P_D(Tc=25^{\circ}C)$	125	W	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$	
Thermal Resistance-Junction to Ambient	$t \leq 10s$	$R_{\theta JA}$	15	$^{\circ}C/W$
	Steady-State		60	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	1.0	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	60	70		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1	μA
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	2.0	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		2.9	3.2	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		3.5	4.2	
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Gate resistance	R_g	$f=1MHz$		1.7		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$		4100		pF
Output Capacitance	C_{oss}			2160		
Reverse Transfer Capacitance	C_{rss}			180		

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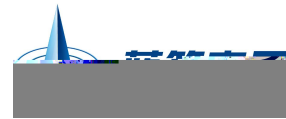
Rev.A Dec.-2021



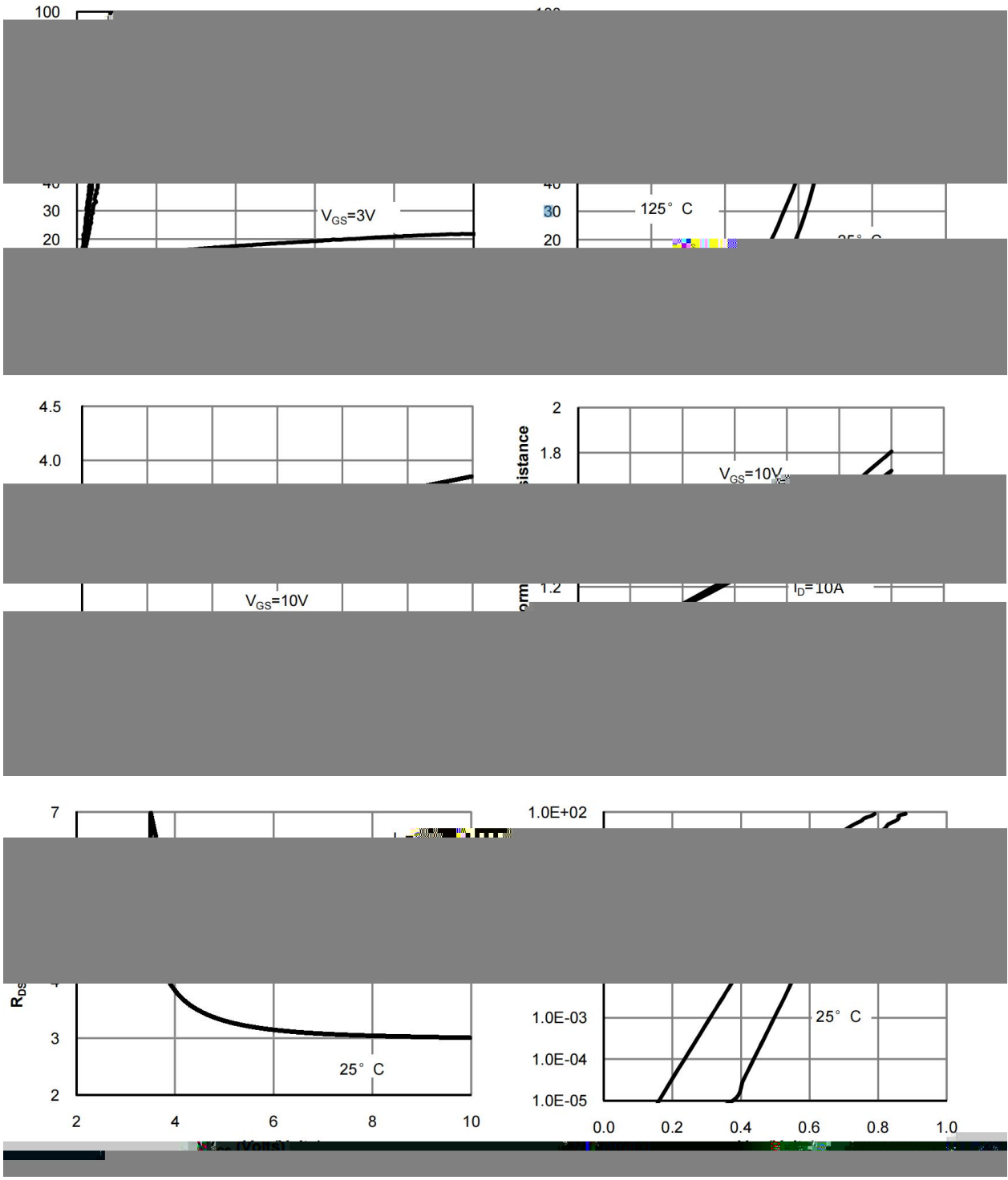
DATA SHEET

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_g(10V)$	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=20A$		60		nC
Total Gate Charge	$Q_g(4.5V)$			23		
Gate Source Charge	Q_{gs}			16		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1\Omega$ $R_{GEN}=3\Omega$		13		ns
Turn-On Rise Time	t_r			4		

T m e



/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

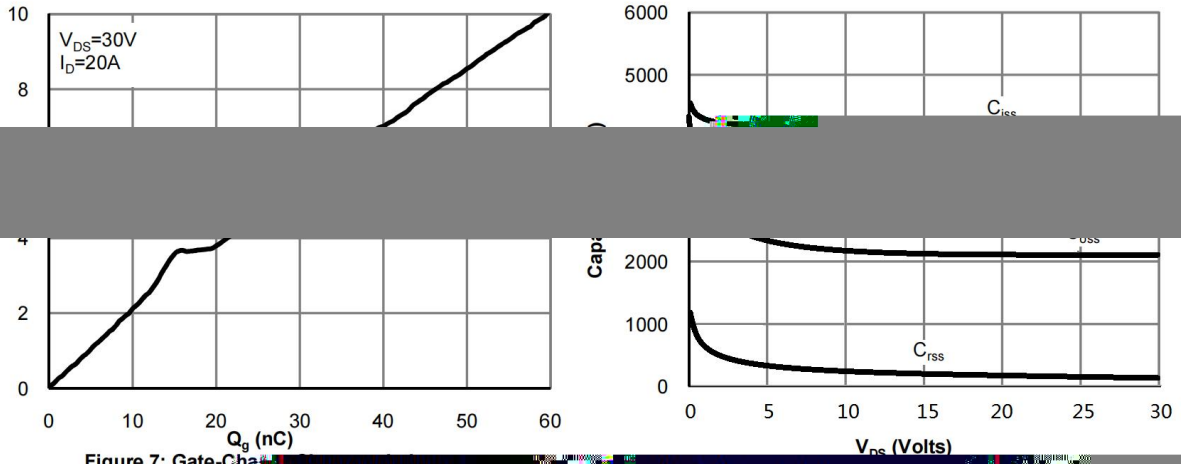
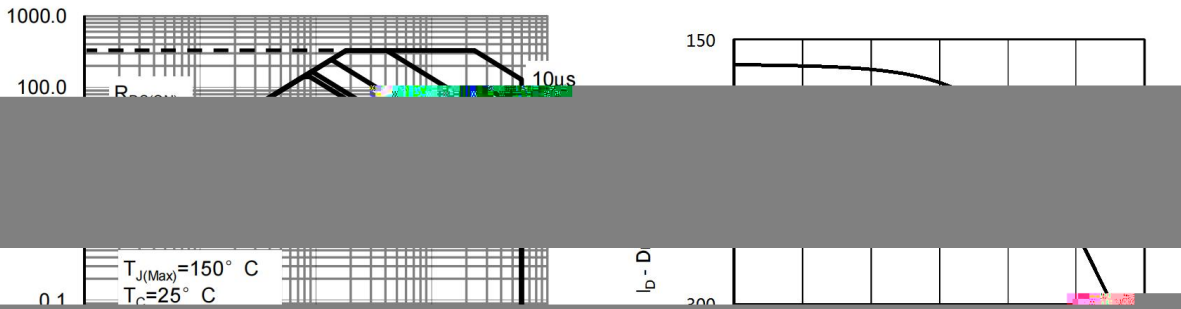
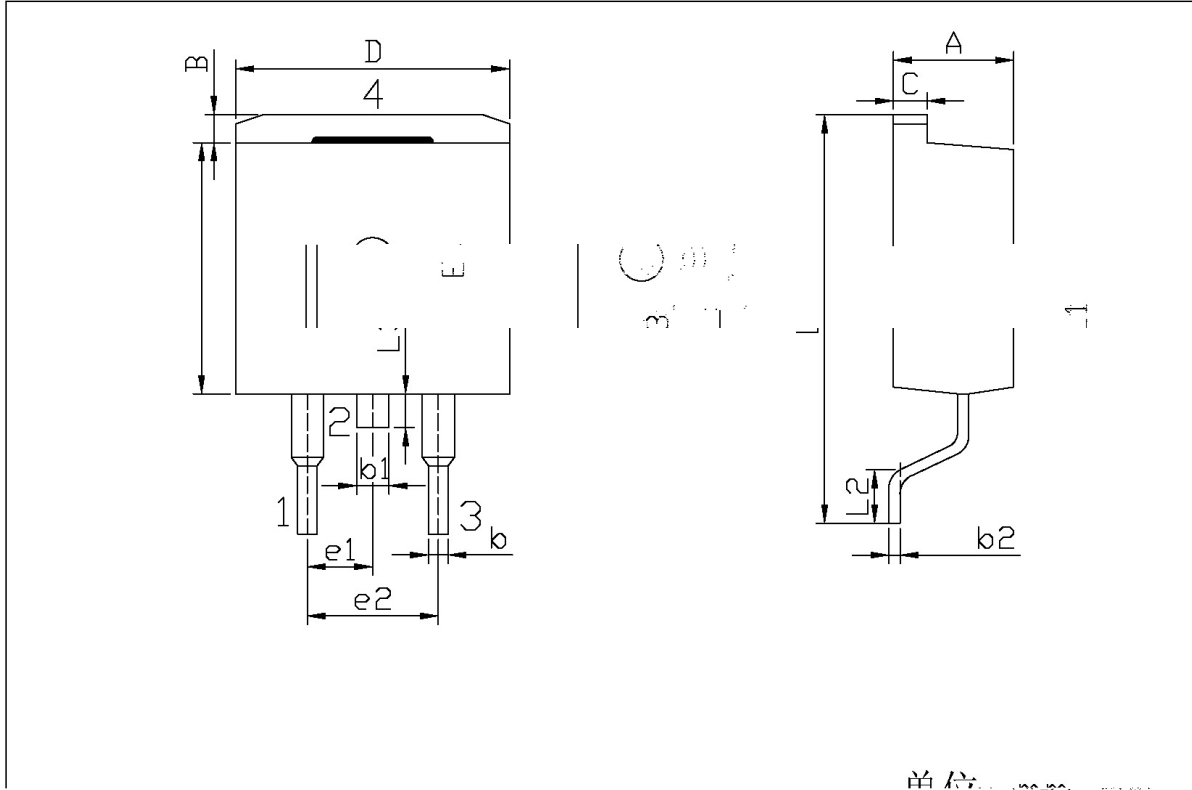


Figure 7: Gate-Charge Characteristics



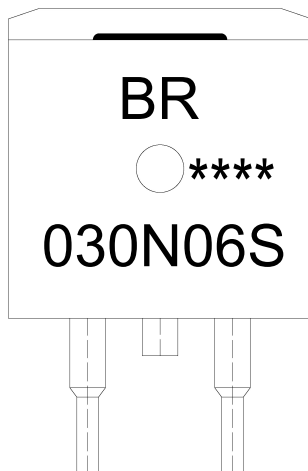
/ Package Dimensions



		Dimensions In Millimeters		Dimensions In Millimeters	
Max		Max		Max	
9.80		4.80		4.70	
2.80		1.40		1.40	
5.28		0.70		0.90	
3.00		1.15		1.35	
2.80		0.40		0.60	
1.60		1.90		1.40	
D	9.80	10.20			

T0-263

/ Marking Instructions



BR

030N06S

Note:

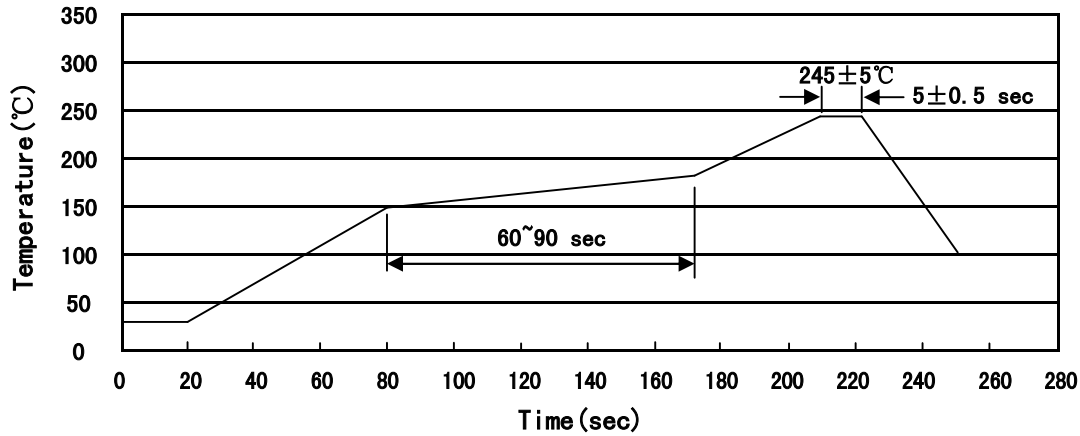
BR: Company Code

030N06S: Product Type.

****: 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°C, Time:60~90sec. |
| 2 | 245±5 | | | 5±0.5sec; | 2.Peak Temp.:245±5°C, Duration:5±0.5sec. |
| 3 | | | 2 | 10°C/sec. | 3. Cooling Speed: 2~10°C/sec. |

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ 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	6	5	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: 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

/ Notices