

描述 / Descriptions

TO-3P 塑封封装 N 沟 MOS 场效应管。N-Channel MOSFET in a TO-3P Plastic Package.

特征 / Features

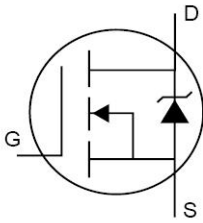
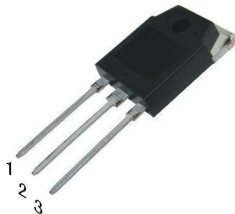
低栅极电荷，开关速度快，雪崩能量高，dv/dt 能力强。

Low gate charge, Fast switching capability, Avalanche energy specified, Improved dv/dt capability.

用途 / Applications

用于高电压、高速功率开关应用，如高效率开关模电源、功率因数校正。

Designed for high voltage, high speed power switching applications such as high efficiency switched mode power supplies, active power factor correction.

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

PIN1 : Gate

PIN 2 : Drain

PIN 3 : Source

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

见印章说明。See Marking Instructions.

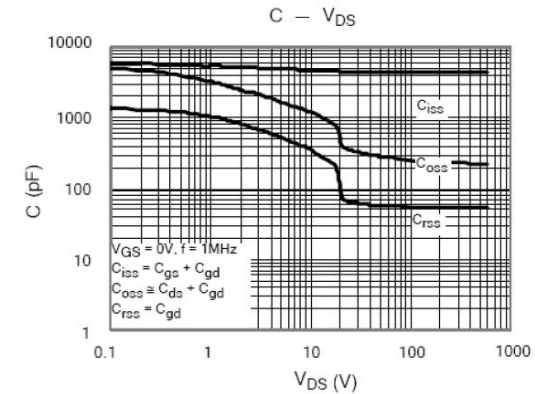
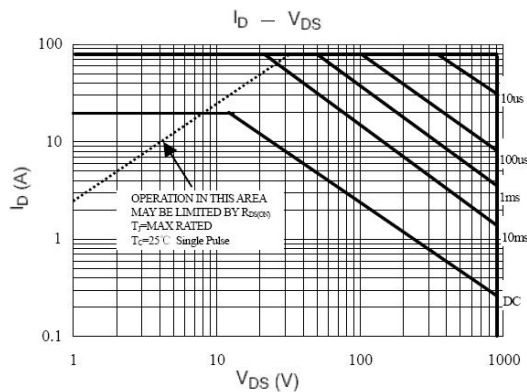
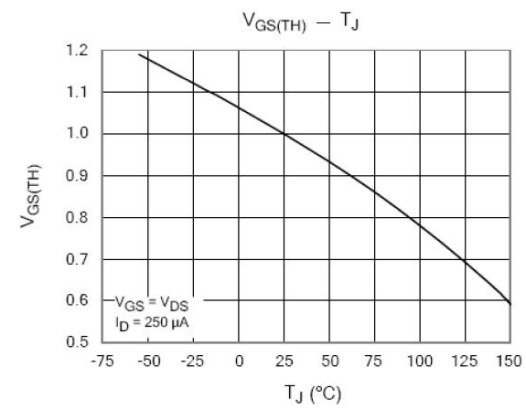
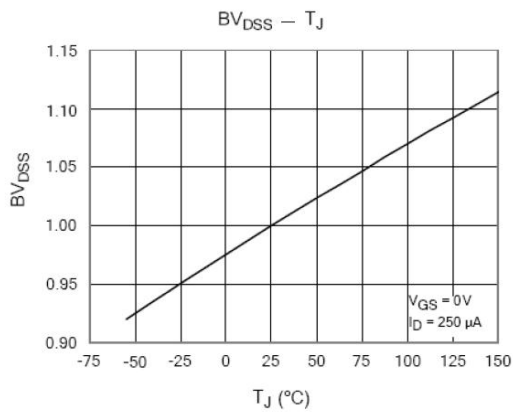
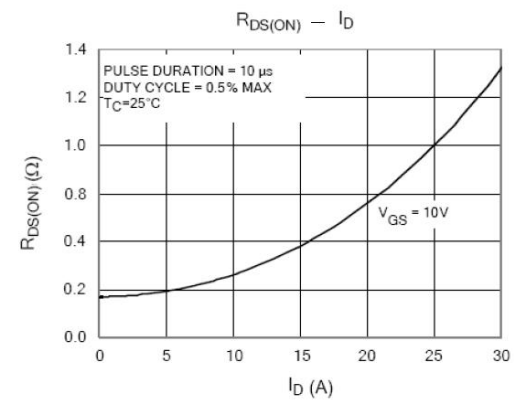
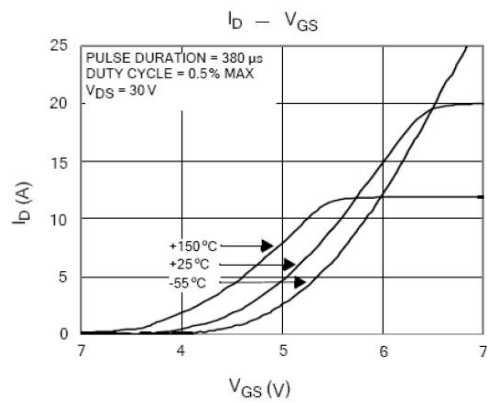
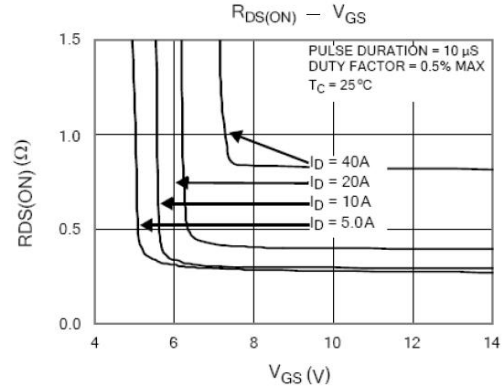
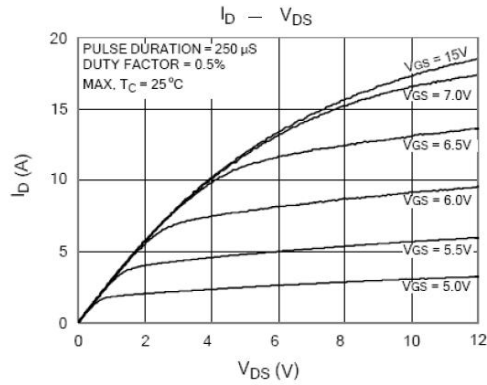
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	900	V
Continuous Drain Current	$I_D(T_c=25^{\circ}C)$	20	A
Continuous Drain Current	$I_D(T_c=100^{\circ}C)$	13	A
Drain Current Pulsed	I_{DM}	80	A
Gate-to-Source Voltage	V_{GSS}	± 30	V
Repetitive Avalanche Energy	E_{AR}	100	mJ
Single Pulse Avalanche Energy	E_{AS}	1000	mJ
Peak Diode Recovery dv/dt	dv/dt	5	V/ns
Power Dissipation	$P_D(T_c=25^{\circ}C)$	250	W
Junction Temperature Range	T_j	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55~150	$^{\circ}C$
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	40	$^{\circ}C/W$
Thermal Resistance Junction-Case	$R_{\theta JC}$	0.5	$^{\circ}C/W$

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-to-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	900			V
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS}=900V$ $V_{GS}=0V$			25	μA
		$V_{DS}=720V$ $T_C=125^{\circ}C$			250	
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=10A$		0.31	0.4	Ω
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_{SD}=20A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		9140		pF
Output Capacitance	C_{oss}			504		
Reverse Transfer Capacitance	C_{rss}			63.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=300V$ $I_D=20A$ $V_{GS}=10V$ $R_G=4.7\Omega$		22		ns
Rise Time	t_r			42		
Turn-Off Delay Time	$t_{d(off)}$			153		
Fall Time	t_f			97		
Total Gate Charge	Q_g	$V_{DS}=300V$ $I_D=20A$ $V_{GS}=10V$		162		nC
Gate-Source Charge	Q_{gs}			22		
Gate-Drain Charge	Q_{gd}			59		

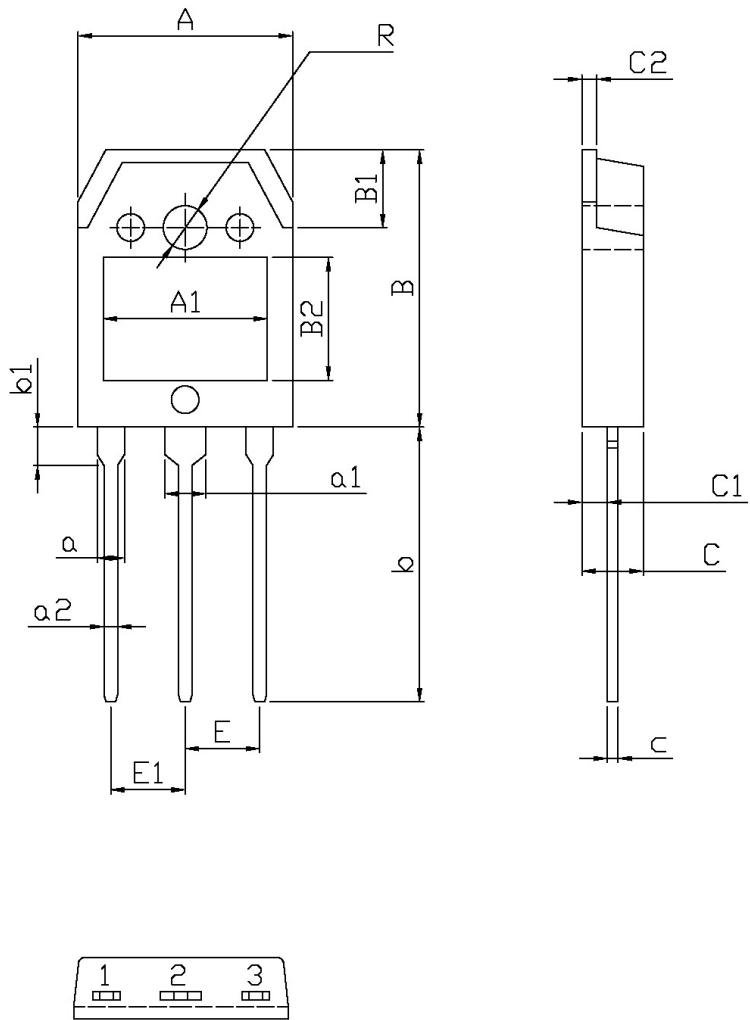
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

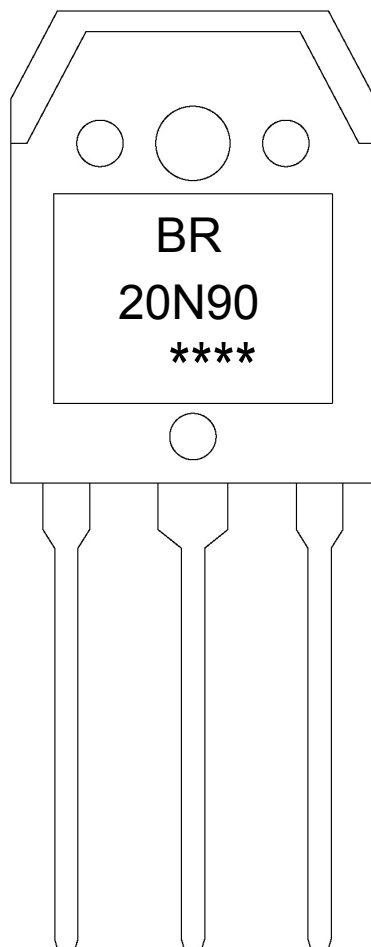
T□-3P

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	15.4	16.0	a2	0.8	1.2
R	3.1	3.5	E	5.45	
B	19.8	20.8	E1	5.45	
B1	5.5	5.9	C	4.3	4.7
B2	9.0		C1	1.2	1.6
A1	12.0		C2	1.4	1.6
b	19.6	20.6	c	0.5	0.7
b1	3.0	3.4			
a	1.8	2.2			
a1	2.8	3.2			

印章说明 / Marking Instructions



说明：

BR: 为公司代码

20N90： 为型号代码

****： 为生产批号代码，随生产批号变化。

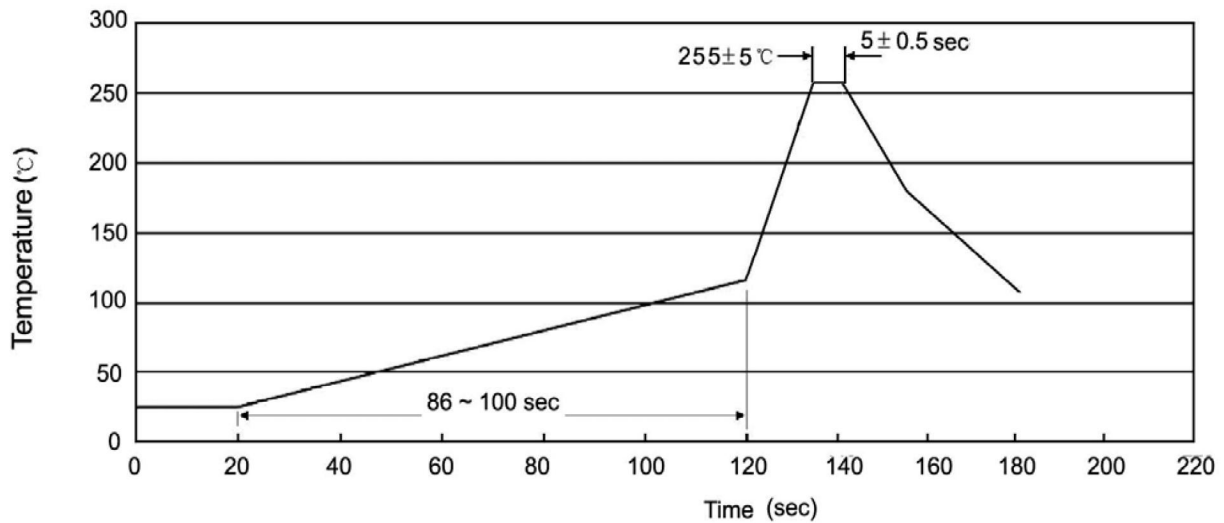
Note:

BR: Company Code.

20N90: Product Type.

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

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±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.:255±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：270±5°C

时间：10±1 sec.

Temp:270±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

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-3P	30	15	450	5	2250	497.5×46×8	555×164×50	575×290×180

使用说明 / Notices