

/ Descriptions

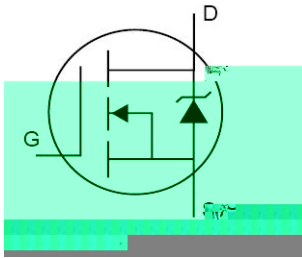
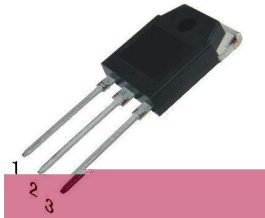
N-Channel MOSFET in a TO-3P Plastic Package.

/ Features

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

/ Applications

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

/ Equivalent Circuit**/ Pinning**

PIN1 Gate PIN 2 Drain PIN 3 Source

/ h_{FE} Classifications & Marking

See Marking Instructions.

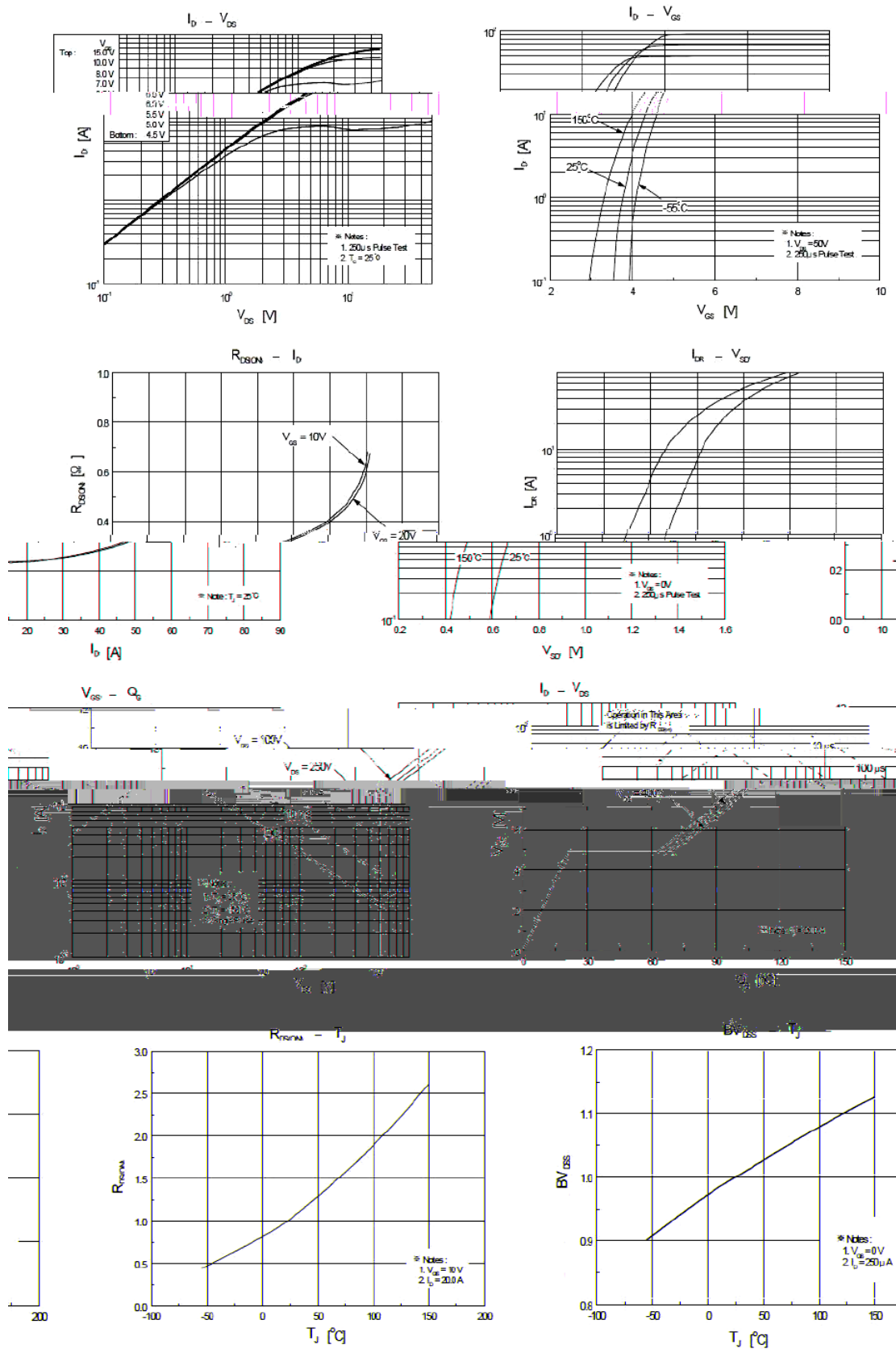
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	500	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_{DP}	80	A
Gate-to-Source Voltage	V_{GSS}	± 30	V
Repetitive Avalanche Energy	E_{AR}	28	mJ
Single Pulse Avalanche Energy	E_{AS}	1110	mJ
Peak Diode Recovery dv/dt	dv/dt	4.5	V/ns
Power Dissipation	$P_D(T_c=25^{\circ}C)$	280	W
Junction Temperature Range	T_j	150	
Storage Temperature Range	T_{stg}	-55~150	
Thermal Resistance Junction-Ambient	R_{JA}	40	/W
Thermal Resistance Junction-Case	R_{JC}	0.44	/W

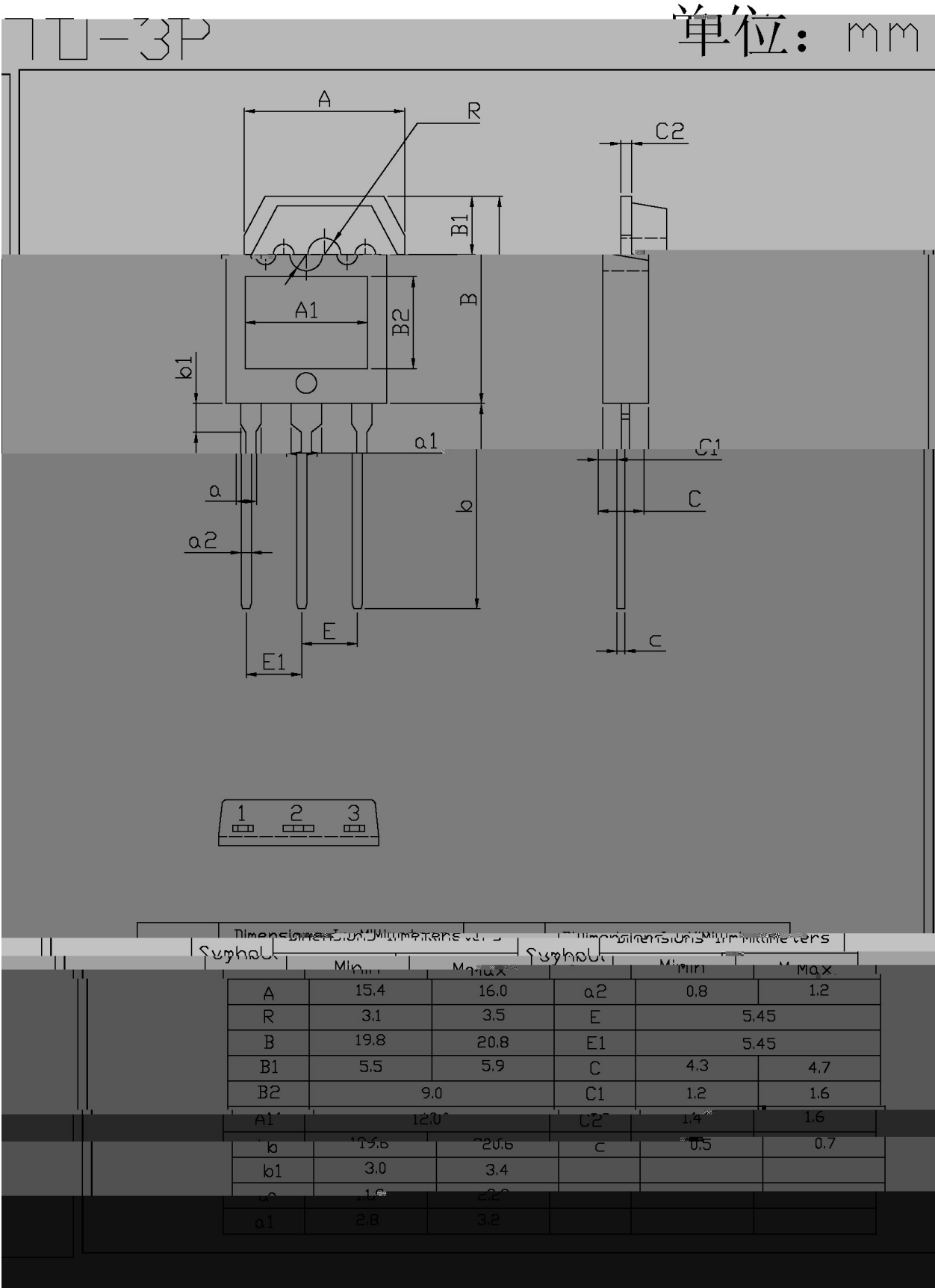
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	500			V
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			1.0	μA
		$V_{DS}=400V$ $T_C=125$			10	
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		5.0	V
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=10A$		0.21	0.26	Ω
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_{SD}=20A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		2700		pF
Output Capacitance	C_{oss}			400		
Reverse Transfer Capacitance	C_{rss}			40		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=250V$ $I_D=20A$ $R_G=2.5\Omega$		100		ns
Rise Time	t_r			400		
Turn-Off Delay Time	$t_{d(off)}$			100		
Fall Time	t_f			100		
Total Gate Charge	Q_g	$V_{DS}=400V$ $I_D=20A$ $V_{GS}=10V$		70		nC
Gate-Source Charge	Q_{gs}			18		
Gate-Drain Charge	Q_{gd}			35		

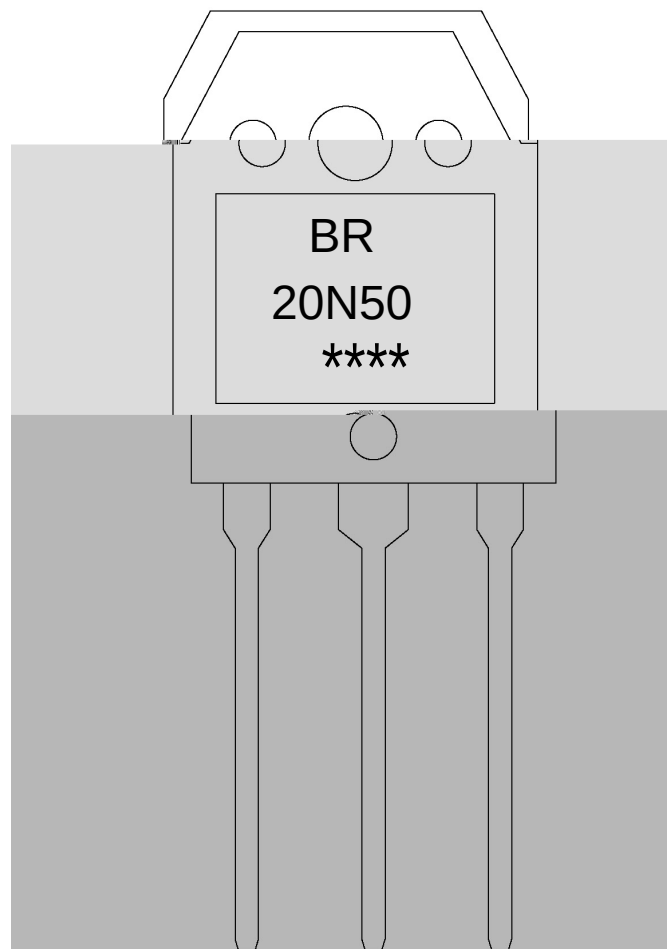
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

20N50

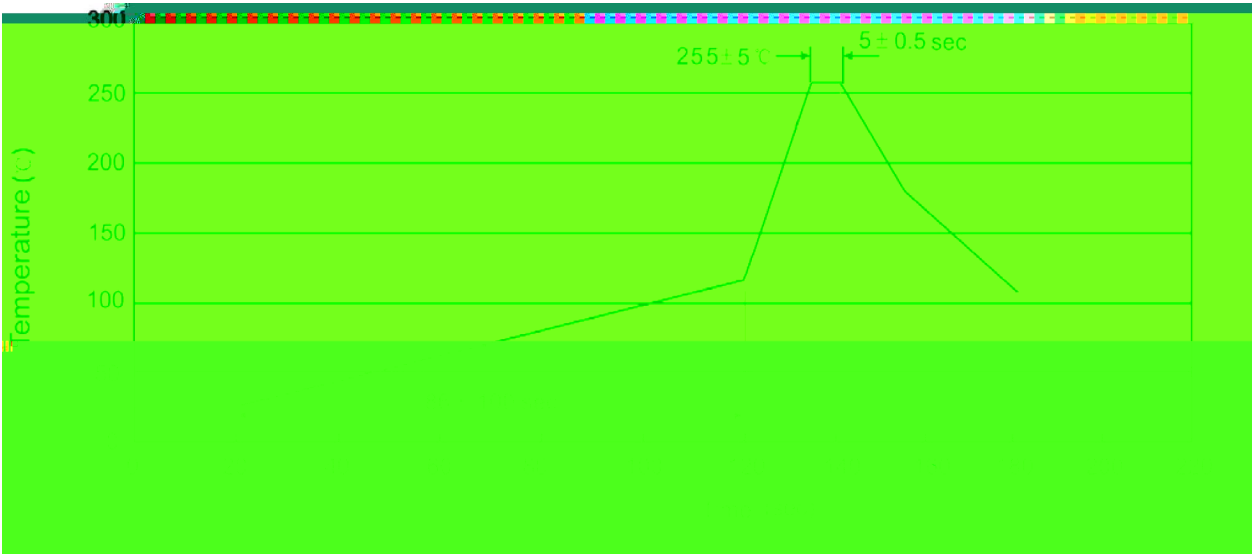
Note:

BR: Company Code.

20N50: Product Type.

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

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- 1

25 150

60 90sec;
- 2

255 5

5 0.5sec;
- 3

2 10

/sec.
- 1.Preheating:25~150

,

Time:60~90sec.
- 2.Peak Temp.:255 5

,

Duration:5 0.5sec.
3. Cooling Speed: 2~10

,

/sec.

/ Resistance to Soldering Heat Test Conditions

270 5 10 1 sec. Temp:270±5 Time:10±1 sec

/ Packaging SPEC.

/ 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

/ Notices