/ Descriptions

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

/ Features

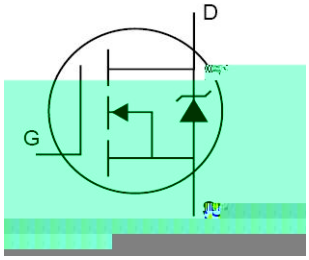
dv/dt

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

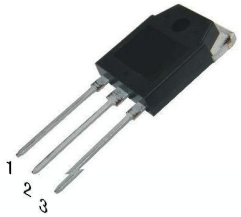
/ Applications

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.

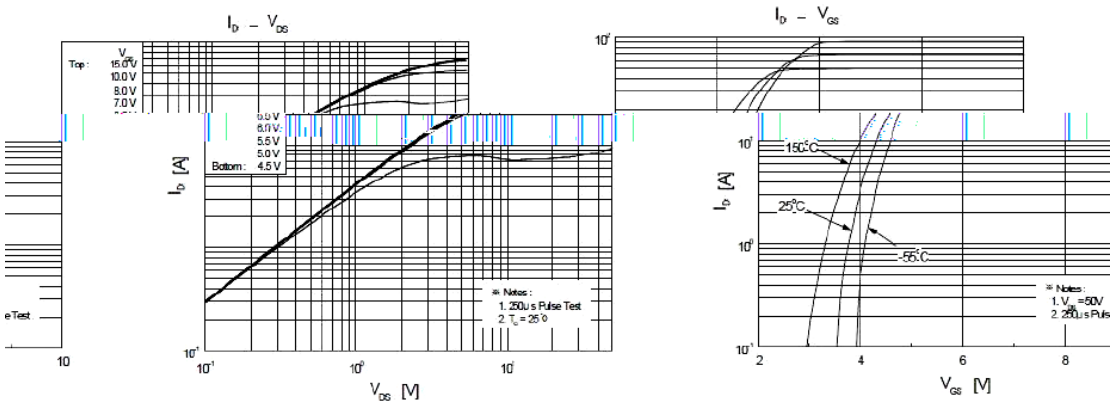
/ Absolute Maximum Ratings(Ta=25)

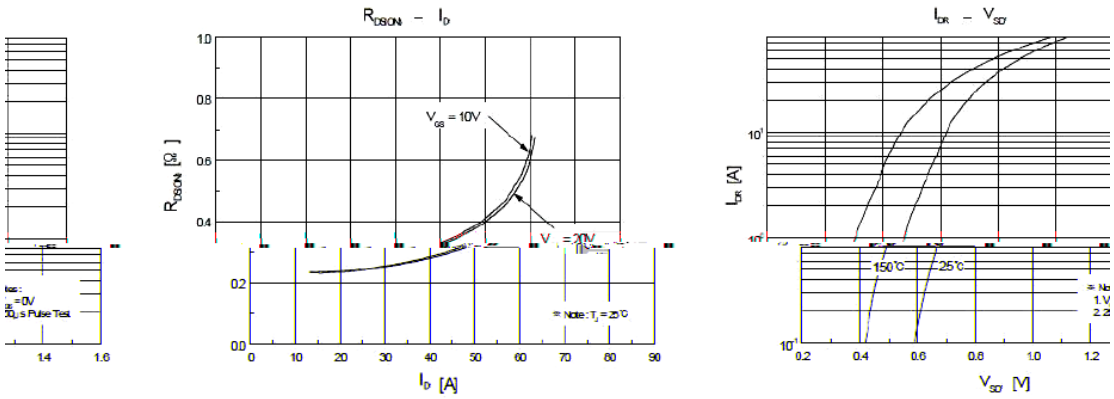
Parameter	Symbol	Rating	Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	500	V
Continuous Drain Current	I_D(Tc=25℃)	20	A
Continuous Drain Current	I_D(Tc=100℃)	13	A
Drain Current Pulsed	I_{DP}	80	A
Gate-to-Source Voltage	V_{GSS}	±30	V
Repetitive Avalanche Energy	E_{AR}	28	mJ
Single Pulse Avalanche Energy	E_{AS}	1110	mJ
Peak Diode Recovery dv/dt	dv/dt	4.5	V/ns
Power Dissipation	P_D(Tc=25℃)	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

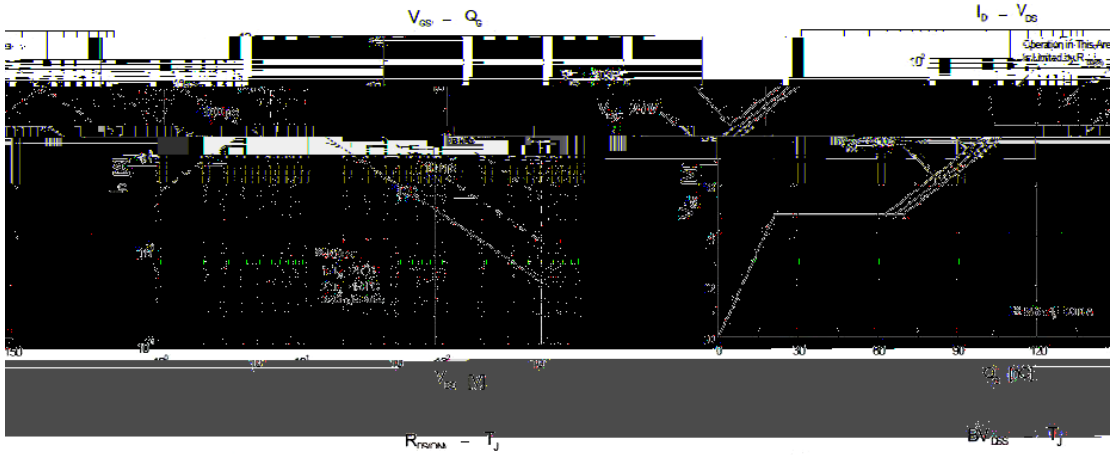
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	V_{GS}=0V I_D=250μA	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}=±30V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	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=2.5Ω		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		

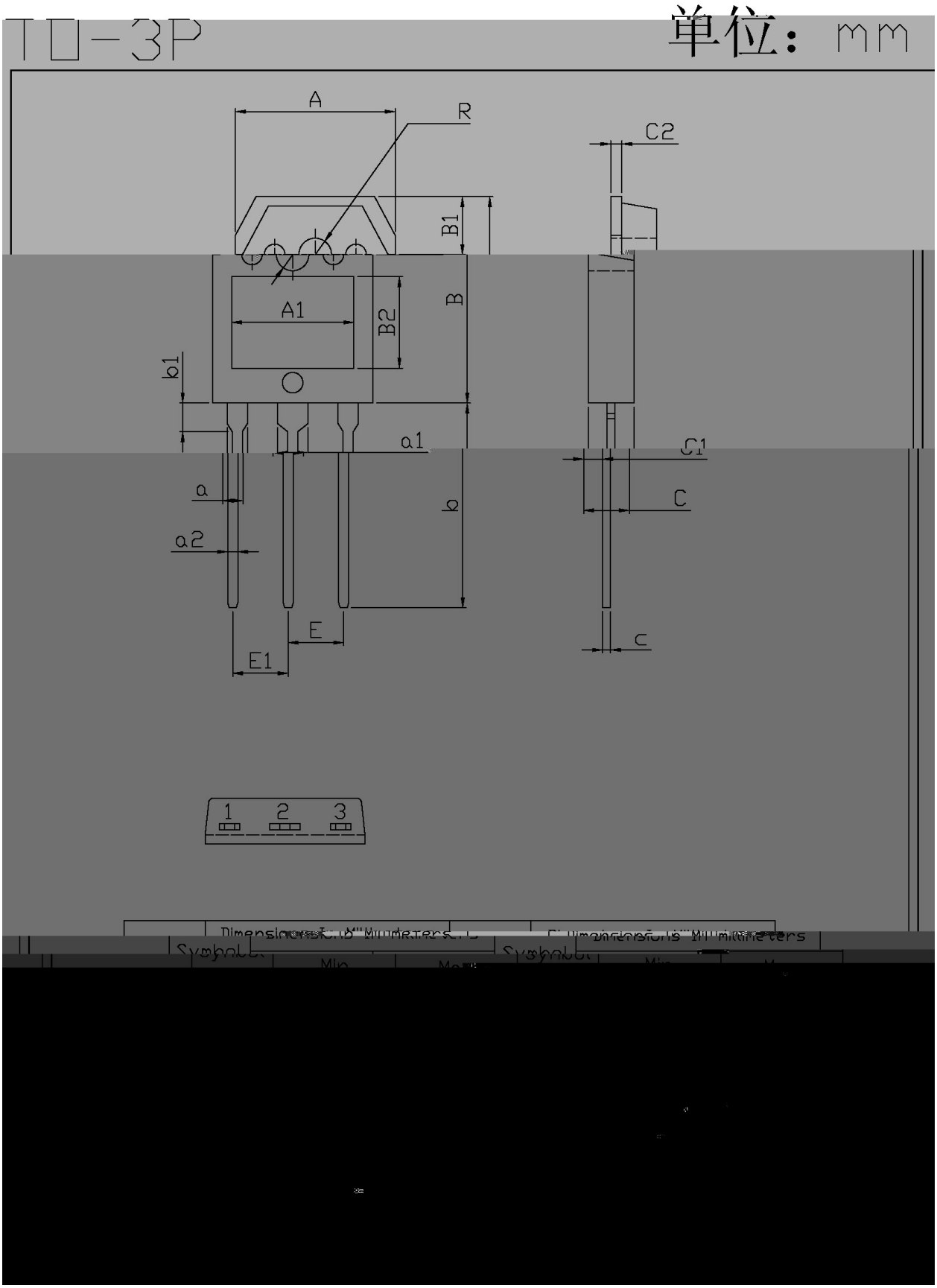
/ Electrical Characteristic Curve



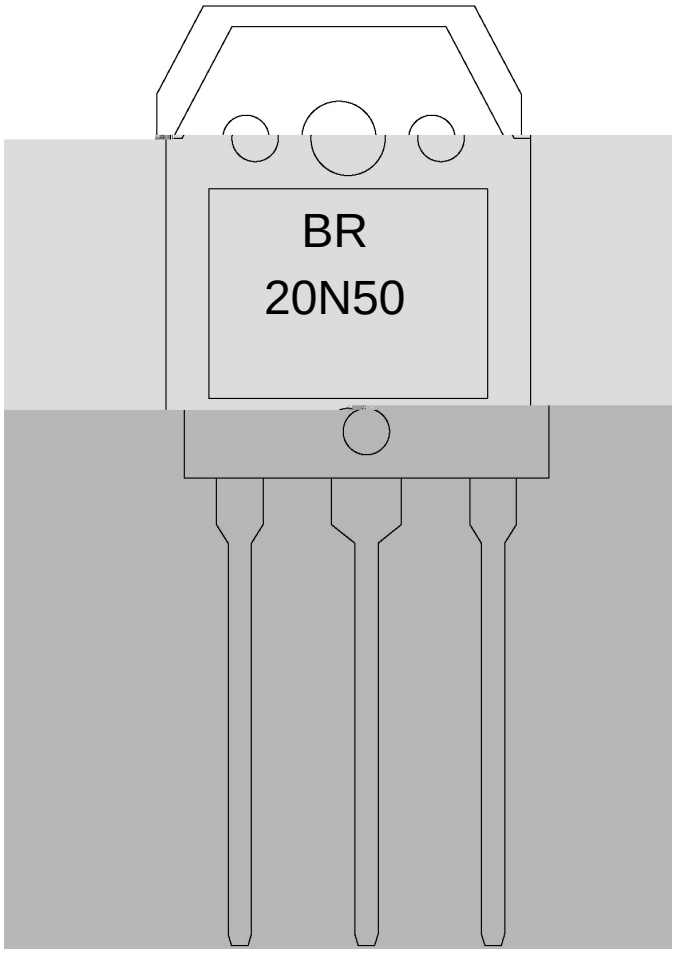




/ Package Dimensions



/ Marking Instructions



BR:

20N50

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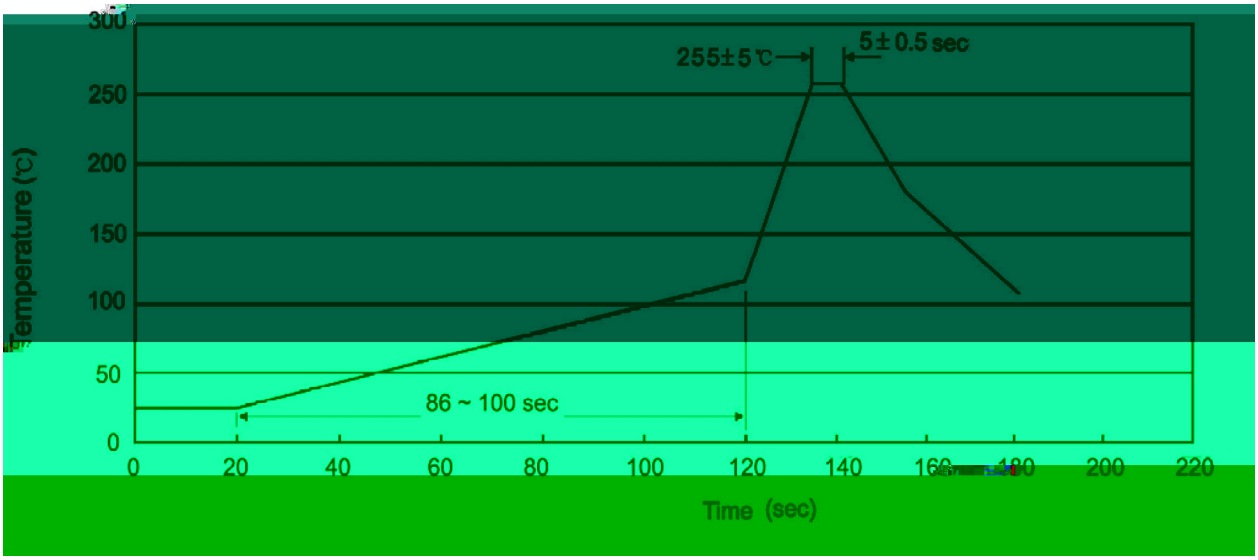
Note:

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;	1.Preheating:25~150 , Time:60~90sec.
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

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)		
	只 套管	套管 盒	只 盒	盒 箱	只 箱	套管	盒	箱
								× ×

/ Notices