

/ Descriptions

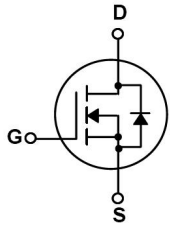
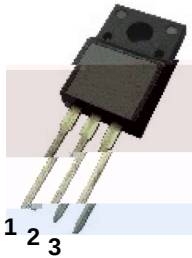
TO-220FL N MOS N-CHANNEL MOSFET in a TO-220FL Plastic Package.

/ Features

Low gate charge Low Crss Fast switching.

/ Applications

These devices are well suited for high efficiency switch mode power supplies .

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 D

PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

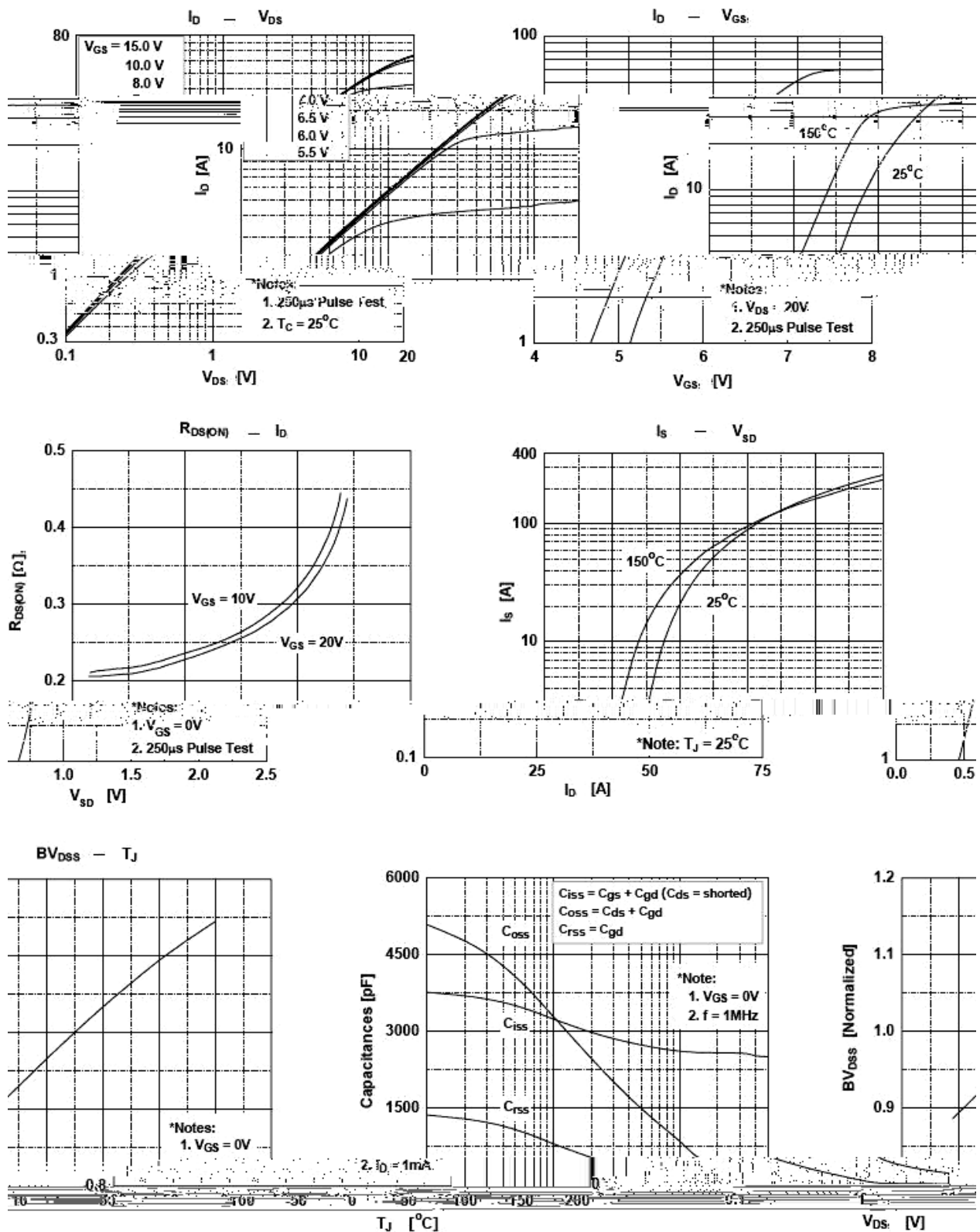
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	20	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	12.9	A
Drain Current - Pulsed	I_{DM}	80	A
Gate-Source Voltage	V_{GSS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	1100	mJ
Repetitive Avalanche Energy	E_{AR}	25	mJ
Avalanche Current	I_{AR}	20	A
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.3	/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	/W
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	38.5	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

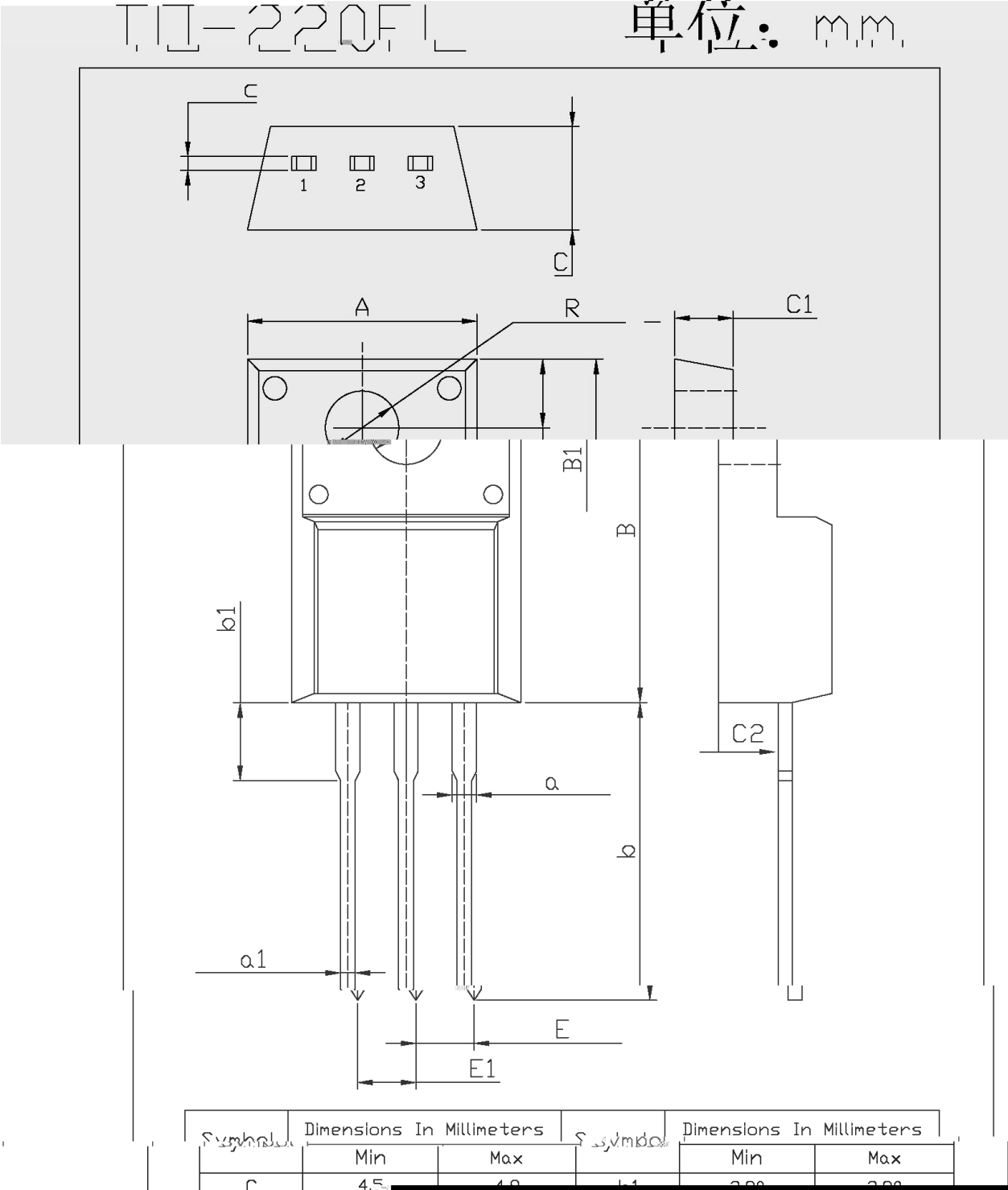
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	500			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			10	μA
		$V_{DS}=400V$ $T_C=125^\circ\text{C}$			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	3.0		5.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=10A$		0.22	0.26	Ω
Forward Transconductance	g_{FS}	$V_{DS}=20V$ $I_D=10A$		25		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=20A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		2550	3390	pF
Output Capacitance	C_{oss}			350	465	
Reverse Transfer Capacitance	C_{rss}			27	40	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=250V$ $I_D=20A$ $R_G=25\Omega$		45	100	ns
Turn-On Rise Time	t_r			120	250	
Turn-Off Delay Time	$t_{d(off)}$			100	210	
Turn-Off Fall Time	t_f			60	130	

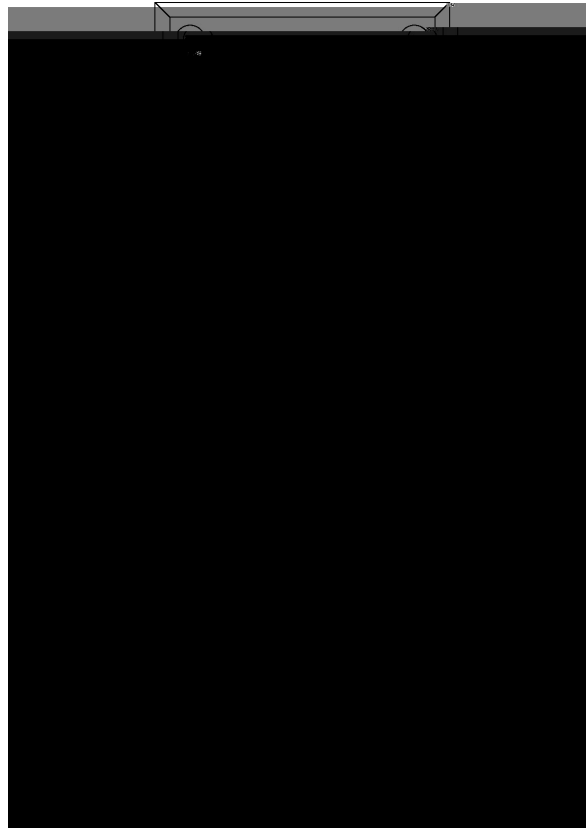
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR
20N50

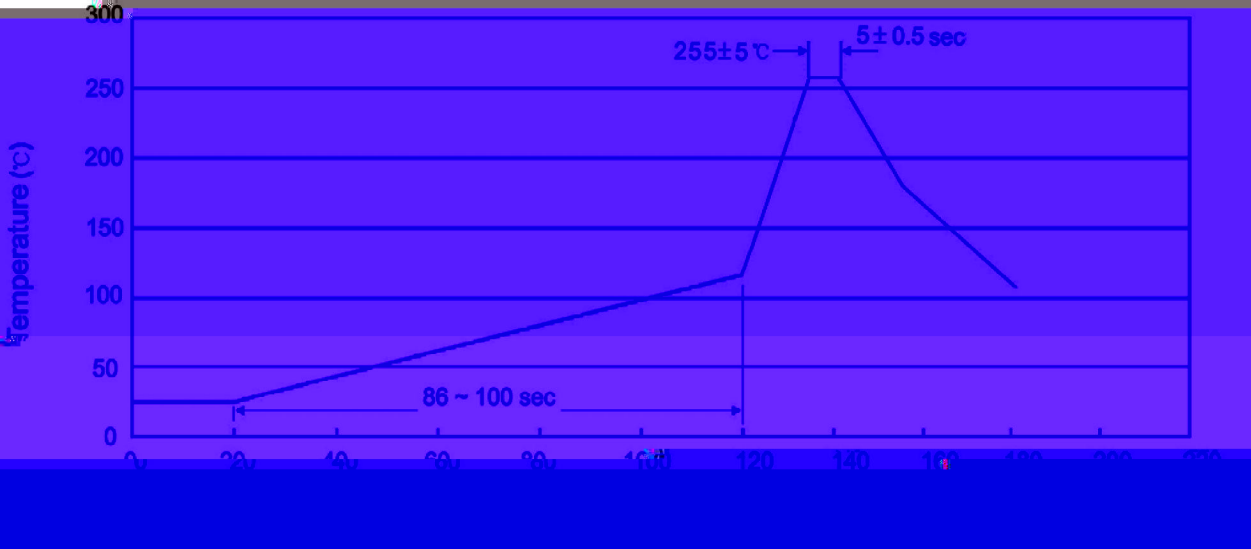
Note:

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-220FL	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

/ Notices