

BRFL20N50

Rev.E Nov.-2017

/ Descriptions

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

/ Features

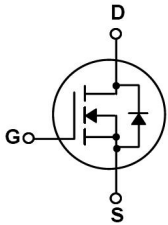
Low gate charge Low Crss Fast switching.

/ Applications

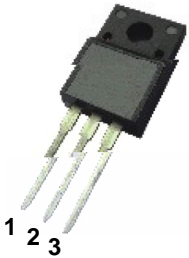
DC/DC

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.

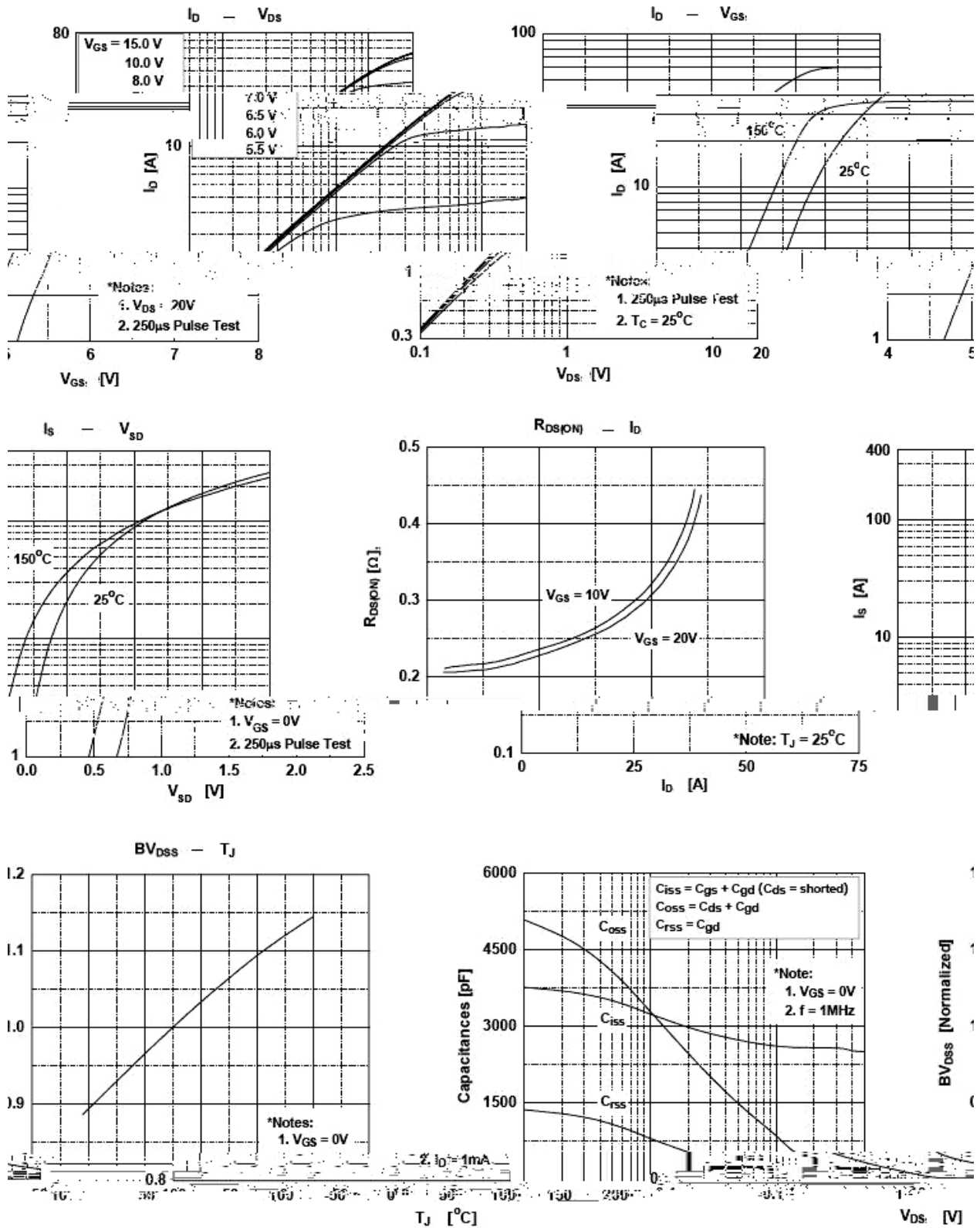
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	$I_D(T_C=25)$	20	A
Drain Current	$I_D(T_C=100)$	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_{JC}	3.3	/W
Thermal Resistance, Junction to Ambient	R_{JA}	62.5	/W
Power Dissipation	$P_D(T_C=25)$	38.5	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

/ Electrical Characteristics(Ta=25)

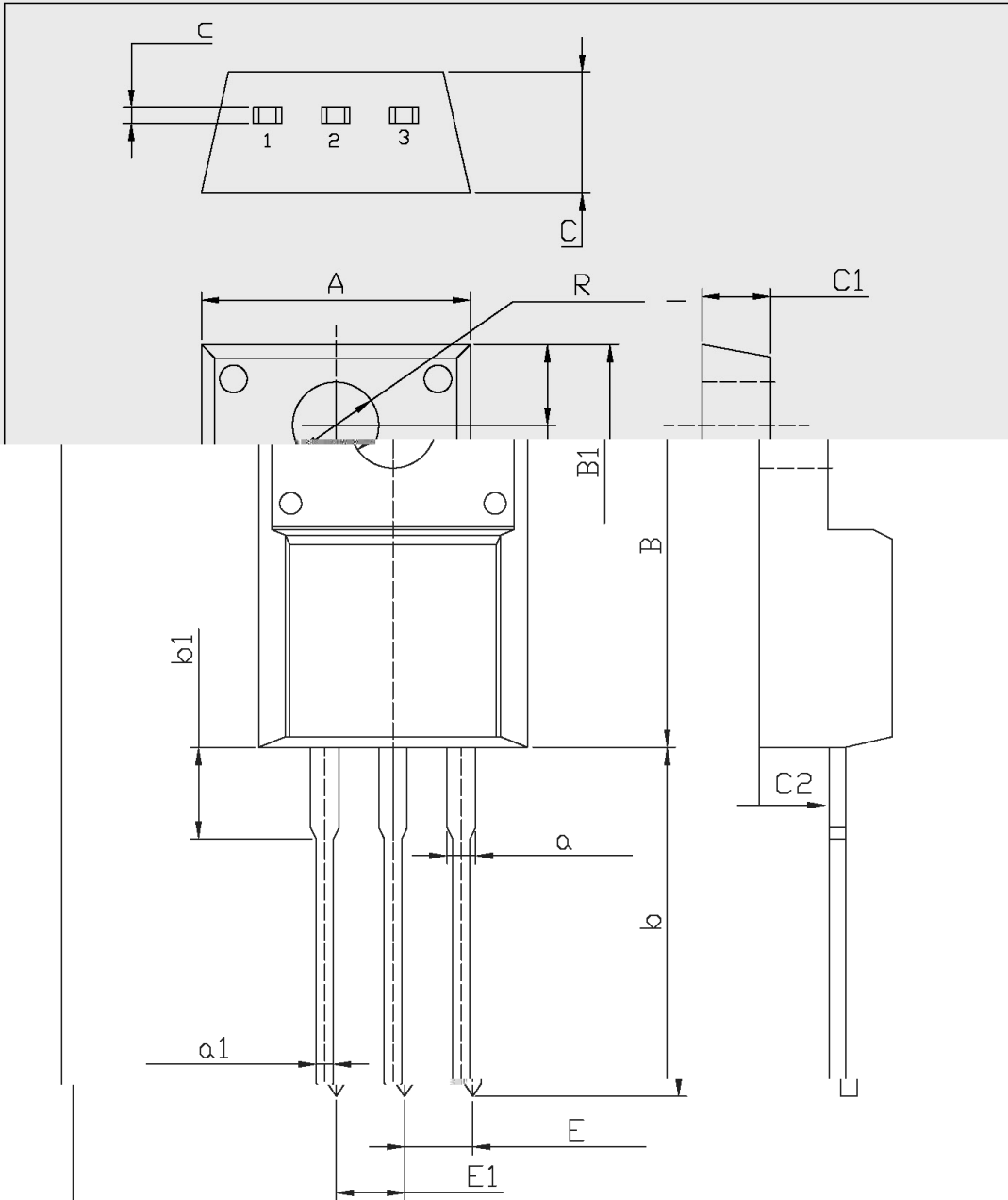
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250$ A	500			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			10	A
		$V_{DS}=400V$ $T_C=125$			100	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=±30V$ $V_{DS}=0V$			±0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250$ A	3.0		5.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=10A$		0.22	0.26	
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	$t_{d(on)}$	$V_{DD}=250V$ $I_D=20A$ $R_G=25$		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



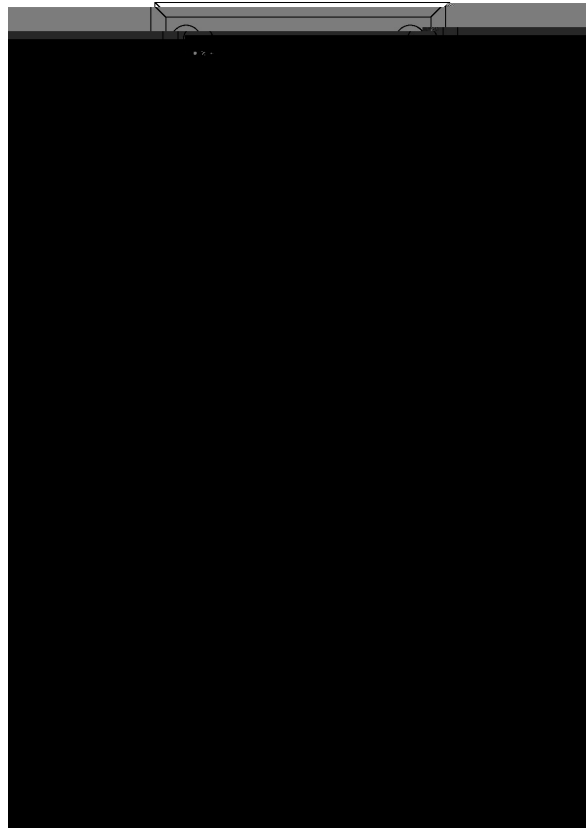
/ Package Dimensions

TO-220FL 单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	4.5	4.8	C1	2.00	2.00

/ Marking Instructions



BR

20N50

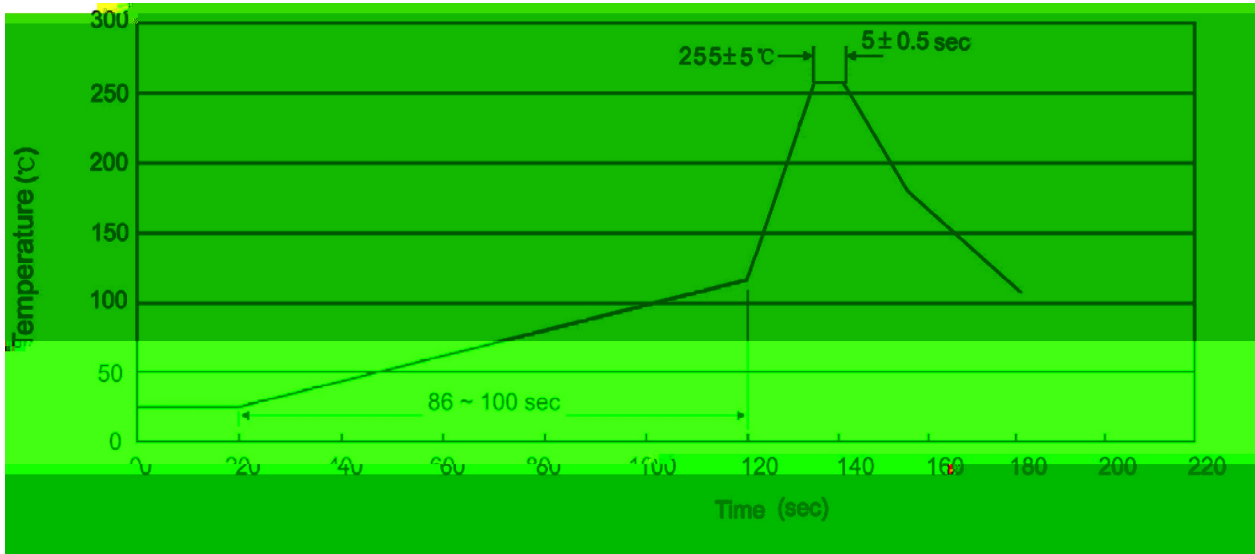
Note:

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; | 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