

/ Descriptions

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

/ Features

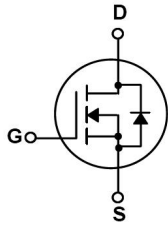
Low gate charge, low crss, fast switching.

/ Applications

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

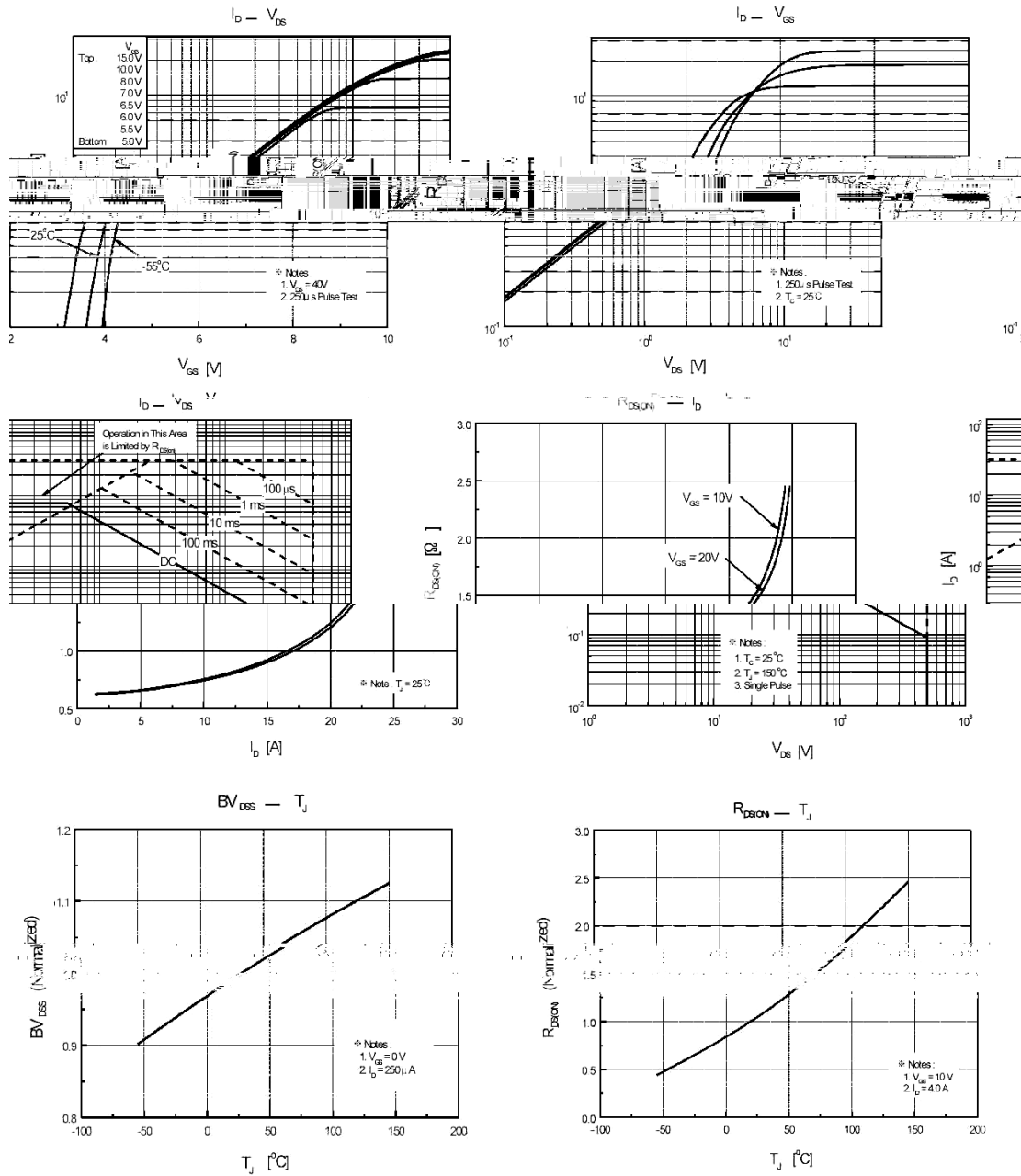
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	$I_D(T_C=25)$	8.0	A
Drain Current	$I_D(T_C=100)$	5.1	A
Drain Current - Pulsed	I_{DM}	32	A
Gate-Source Voltage	V_{GSS}	± 30	V
Avalanche Current	I_{AR}	8	A
Single Pulsed Avalanche Energy	E_{AS}	320	mJ
Repetitive Avalanche Energy	E_{AR}	13.4	mJ
Power Dissipation	$P_D(T_C=25)$	44	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

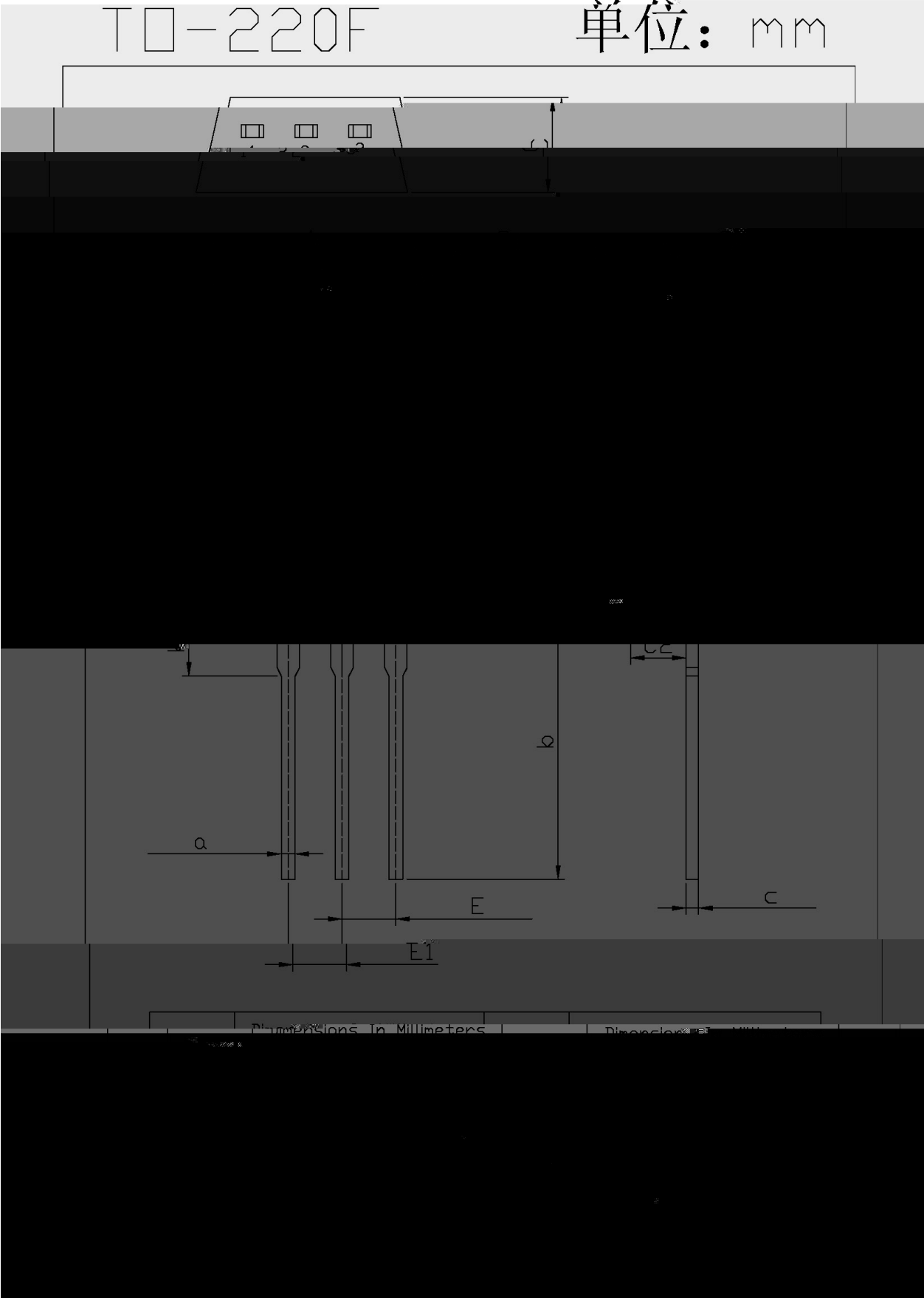
/ Electrical Characteristics(Ta=25)

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
		$V_{DS}=400V$ $T_C=125$			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=4.0A$		0.70	0.85	Ω
Forward Transconductance	g_{FS}	$V_{DS}=40V$ $I_D=4.0A$		7.0		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=8A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1570	2040	pF
Output Capacitance	C_{oss}			150	195	
Reverse Transfer Capacitance	C_{rss}			15	20	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=250V$ $I_D=8A$ $R_G=25\Omega$		25	60	ns
Turn-On Rise Time	t_r			75	160	
Turn-Off Delay Time	$t_{d(off)}$			125	260	
Turn-Off Fall Time	t_f			75	160	

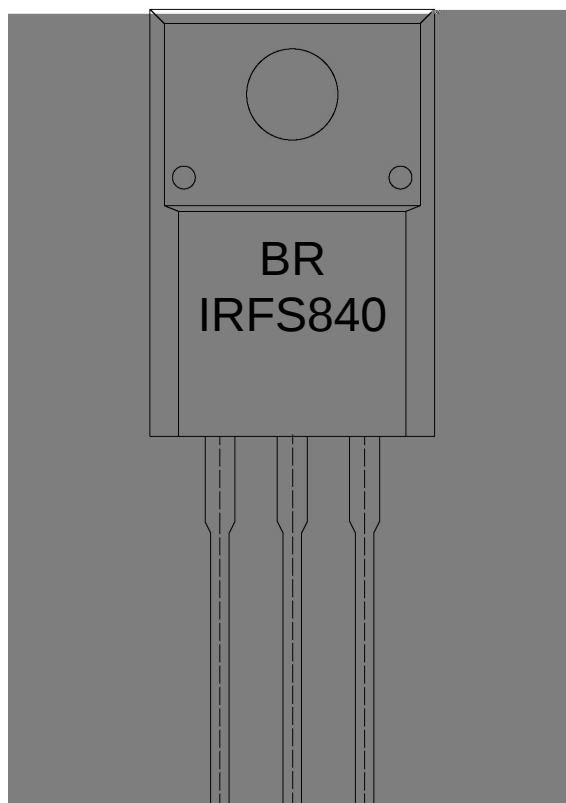
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

IRFS840

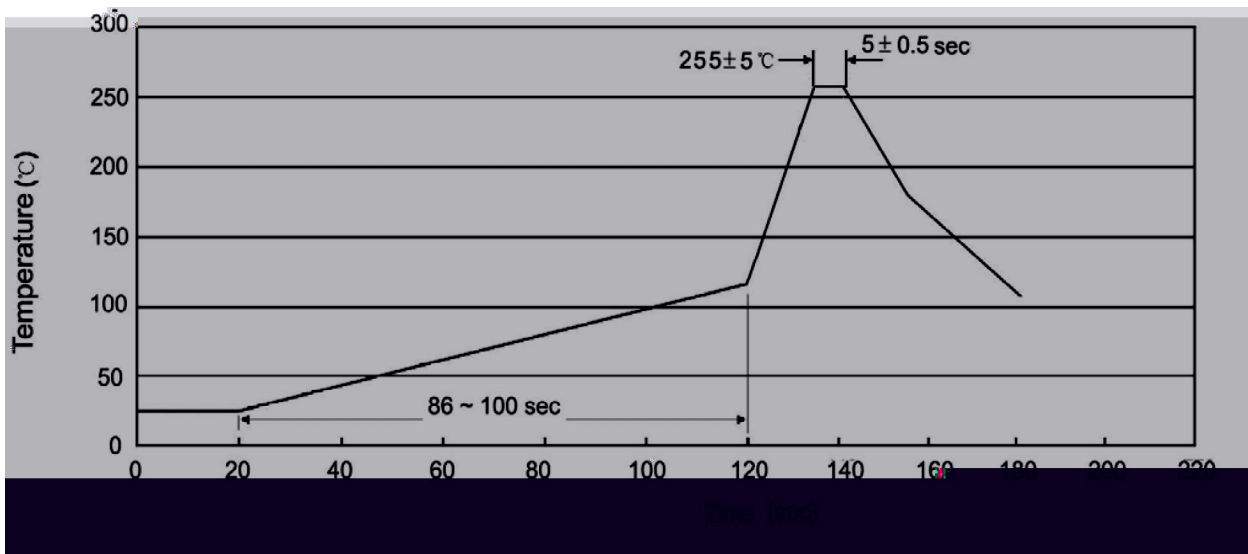
Note:

BR: Company Code

IRFS840: 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.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只袋	袋盒	只盒	盒箱	只箱	袋	盒	箱

/ 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