

# IRF840

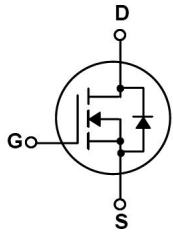
Rev.H Jul.-2018

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

Low gate charge, low crss, fast switching.

## DC/DC

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



PIN1 G

PIN 2 D

PIN 3 S

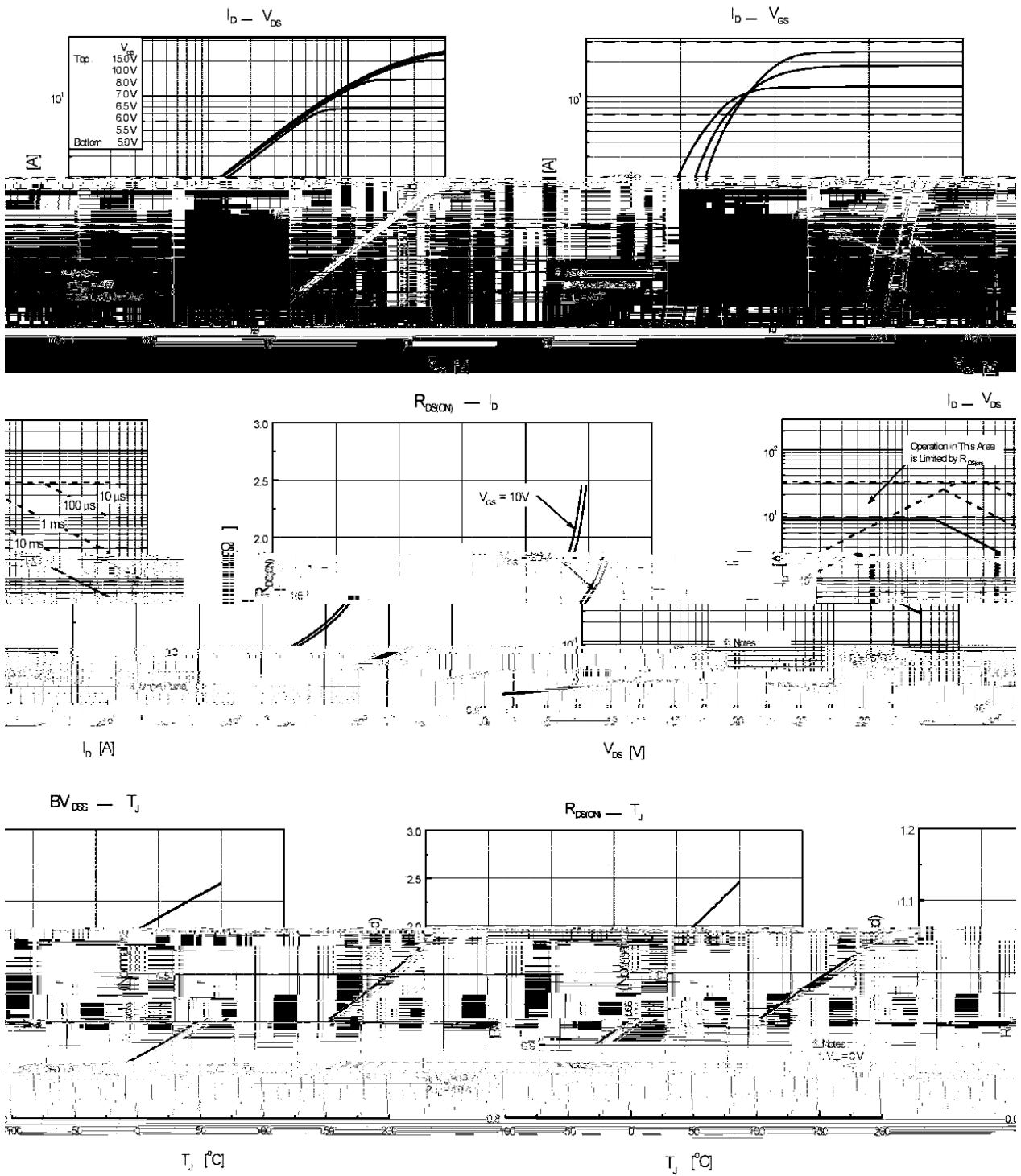
/ Absolute Maximum Ratings(Ta=25 )

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	500	V
Drain Current	$I_D(T_C=25)$	8.0	A
	$I_D(T_C=100)$	5.1	A
Pulsed Drain Current	$I_{DM}$	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
Total Power Dissipation	$P_D(T_C=25)$	134	W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	

/ Electrical Characteristics(Ta=25 )

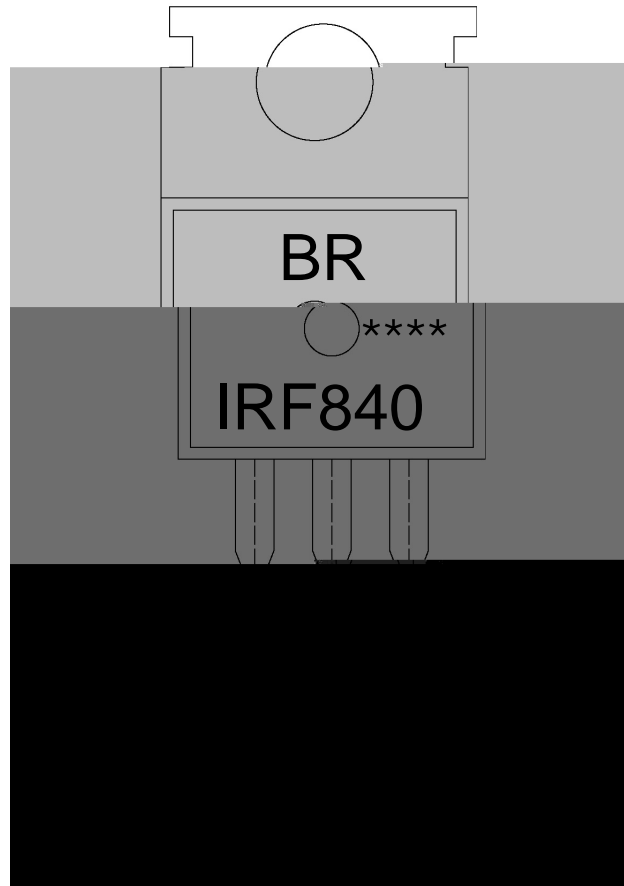
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	500			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=500V$ $V_{GS}=0V$			10	$\mu A$
		$V_{DS}=400V$ $T_C=125$			100	$\mu A$
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 30V$ $V_{DS}=0V$			±0.1	$\mu A$
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	
Forward Transconductance	$g_{FS}$	$V_{DS}=40V$ $I_D=4.0A$		7.0		S
Forward On 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	$t_{d(on)}$	$V_{DD}=250V$ $I_D=8A$ $R_G=25$		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





**/ Marking Instructions**



BR

IRF840

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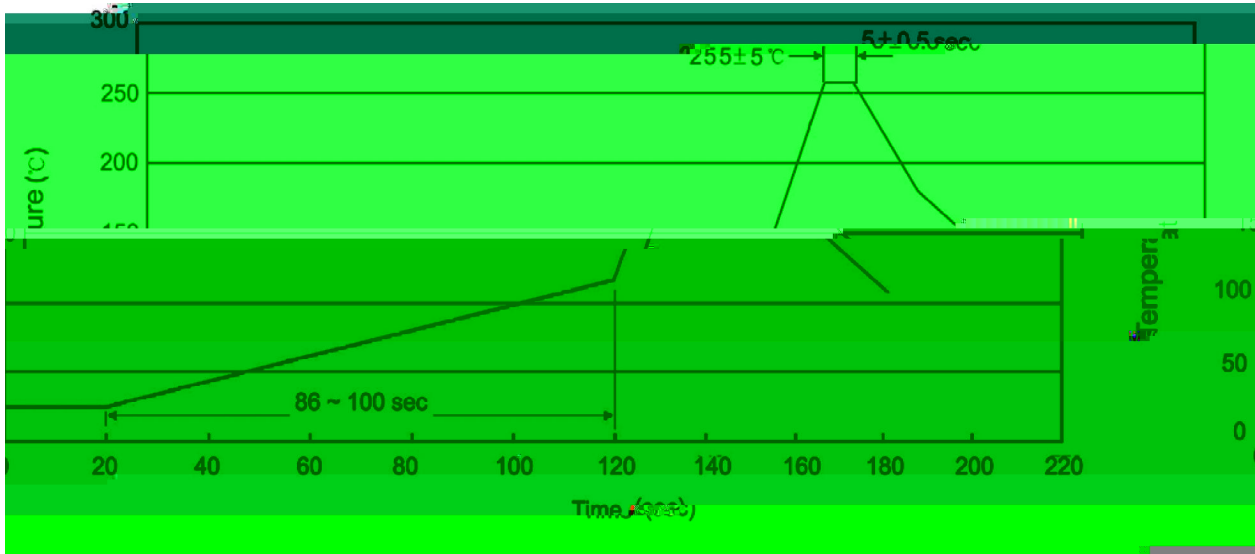
Note:

BR: Company Code

IRF840: 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	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Bag	Bags/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices