## / Descriptions

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

## / Features

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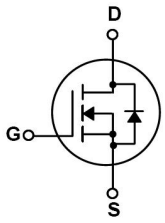
Low gate charge, low crss, fast switching.

## / Applications

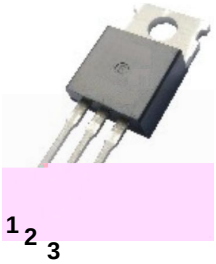
DC/DC

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

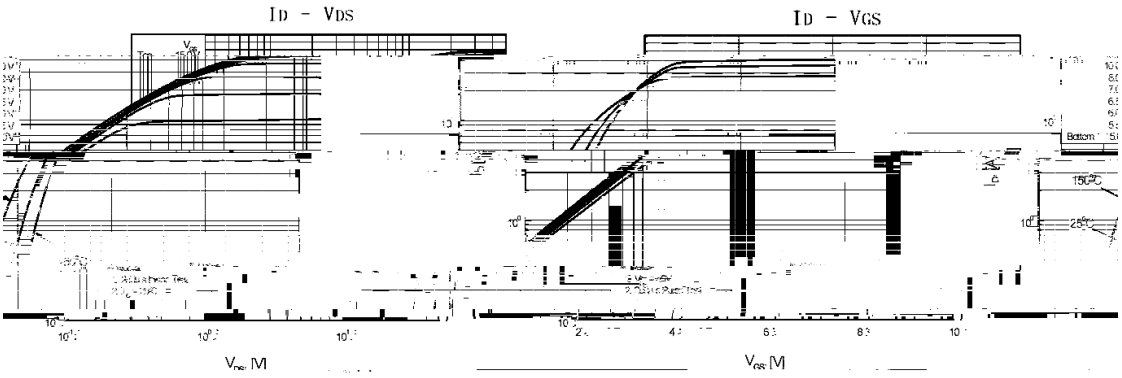
See Marking Instructions.

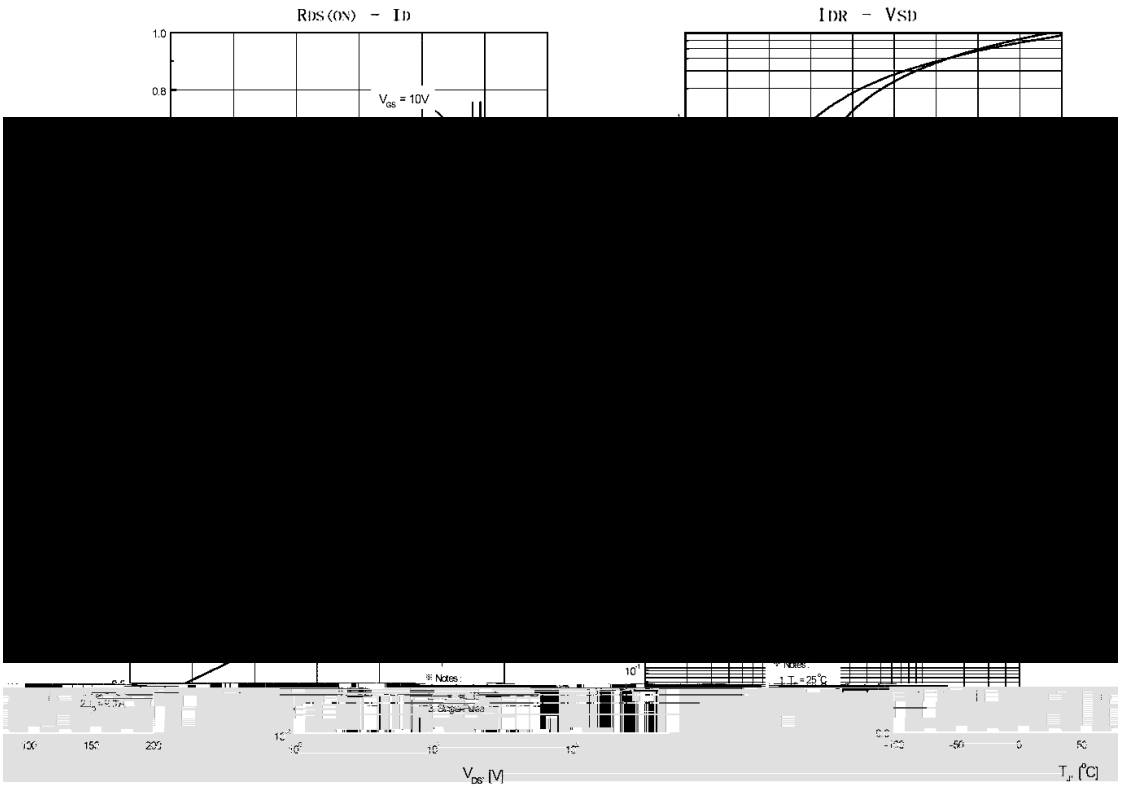
| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DSS}$ | 200 | V |
| Drain Current | $I_D$(Tc=25 ) | 18 | A |
| | $I_D$(Tc=100 ) | 11.4 | A |
| Pulsed Drain Current | $I_{DM}$ | 72 | A |
| Gate-Source Voltage | $V_{GSS}$ | ±30 | V |
| Single Pulsed Avalanche Energy | $E_{AS}$ | 250 | mJ |
| Repetitive Avalanche Energy | $E_{AR}$ | 13.9 | mJ |
| Avalanche Current | $I_{AR}$ | 18 | A |
| Total Power Dissipation | $P_D$(Tc=25 ) | 139 | W |
| Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 to 150 | |

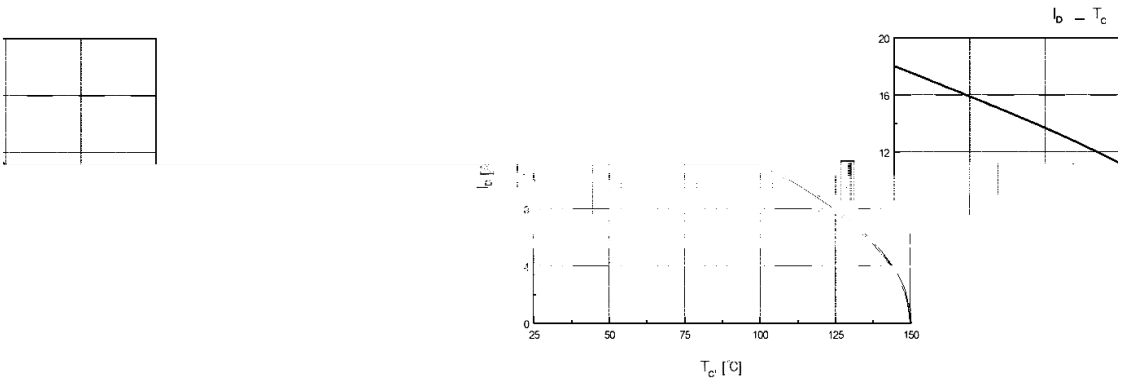
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Zero Gate Voltage Drain Current | $BV_{DSS}$ | $V_{GS}$=0V $I_D$=250μA | 200 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=200V $V_{GS}$=0V | | | 10 | μA |
| | | $V_{DS}$=160V $T_C$=125 | | | 100 | μA |
| Gate-Body Leakage Current Forward | $I_{GSS}$ | $V_{GS}$=±30V $V_{DS}$=0V | | | ±0.1 | μA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$ $I_D$=250μA | 2.0 | | 4.0 | V |
| Forward Transconductance | $g_{FS}$ | $V_{DS}$=40V $I_D$=9.0A | | 13 | | S |

Static Drain-Source

## / Electrical Characteristic Curve



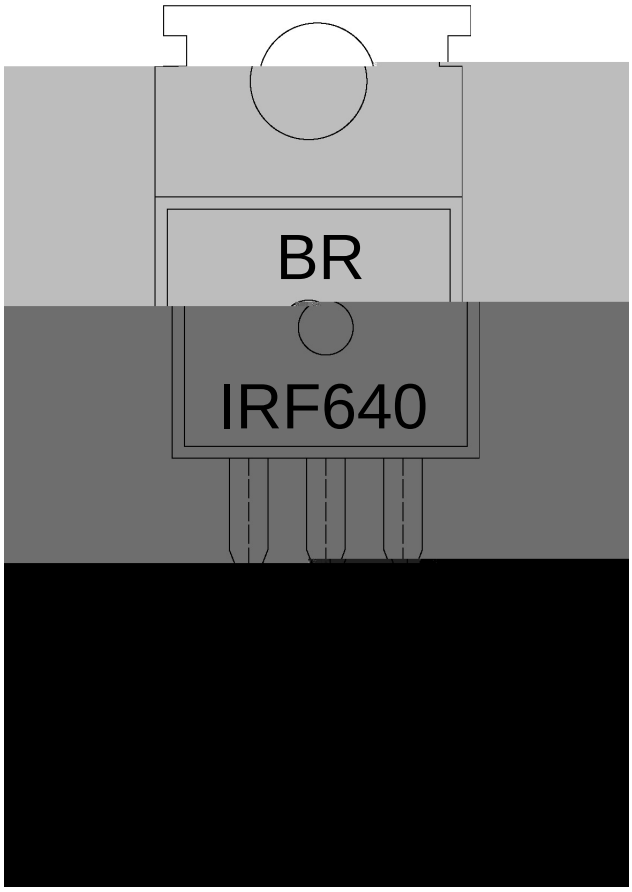



## / Package Dimensions



## / Marking Instructions




BR

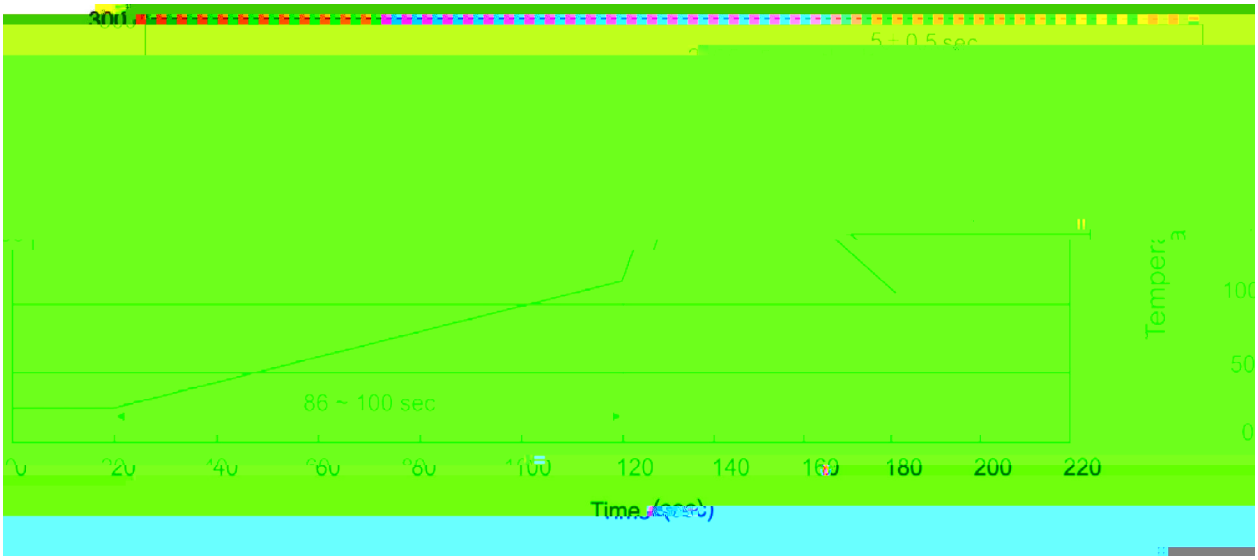
IRF640

****

Note:

| | |
|---|---|
| BR: | Company Code |
| IRF640: | 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

/ TUBE

## / Notices