



PRELIMINARY

SOLID STATE DEVICES, INC

14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

Designer's Data Sheet

FEATURES:

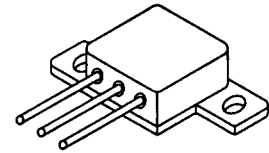
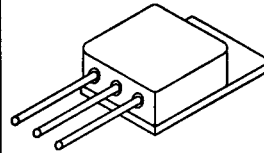
- Rugged construction with poly silicon gate
- Low RDS(on) and high transconductance
- Excellent high temperature stability
- Very fast switching speed
- Fast recovery and superior dv/dt performance
- Increased reverse energy capability
- Low input and transfer capacitance for easy paralleling
- Hermetically sealed power package
- TX, TXV and Space Level screening available
- Replaces: IRFM150 Types

SFF150M SFF150Z

30 AMP 100 VOLTS 0.055 Ω N-CHANNEL POWER MOSFET

TO-254

TO-254Z



MAXIMUM RATINGS

| CHARACTERISTIC | SYMBOL | VALUE | UNIT |
|--------------------------------------|------------------|-------------|-------|
| Drain to Source Voltage | V _{DS} | 100 | Volts |
| Gate to Source Voltage | V _{GS} | ± 20 | Volts |
| Continuous Drain Current | I _D | 30 | Amps |
| Operating and Storage Temperature | Top & Tstg | -55 to +150 | °C |
| Thermal Resistance, Junction to Case | R _{θJC} | 1 | °C/W |
| Total Device Dissipation @ TC=25°C | P _D | 125 | Watts |
| Total Device Dissipation @ TC=55°C | | 95 | |

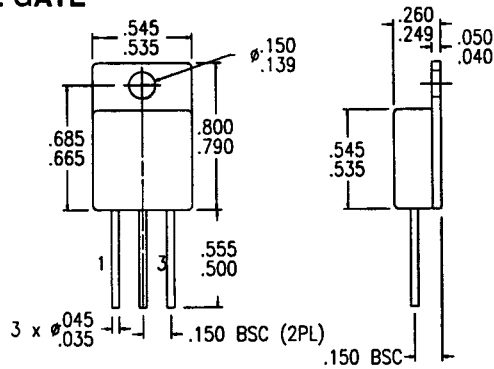
PACKAGE OUTLINE: TO-254

PIN OUT:

PIN 1: DRAIN

PIN 2: SOURCE

PIN 3: GATE



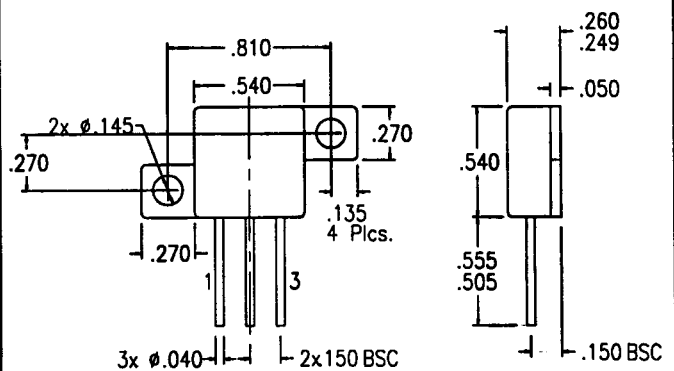
PACKAGE OUTLINE: TO-254Z

PIN OUT:

PIN 1: DRAIN

PIN 2: SOURCE

PIN 3: GATE



Available with Glass or Ceramic Seals. Contact Factory for details.

NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: F00041 C

MED

**SFF150M
SFF150Z**

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ELECTRICAL CHARACTERISTICS @ T_J=25° C (Unless Otherwise Specified)

| RATING | | SYMBOL | MIN | TYP | MAX | UNIT |
|--|--|--|-----|---------------------|-------------------------|------------|
| Drain to Source Breakdown Voltage (VGS=0 V, ID=250μA) | | BV _{DSS} | 100 | --- | --- | V |
| Drain to Source on State Resistance (VGS=10 V, ID=20 A) | | R _{DS(on)} | --- | --- | 0.055 | Ω |
| On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V) | | ID(on) | 30 | --- | --- | A |
| Gate Threshold Voltage (VDS=VGS, ID=250μA) | | VGS(th) | 2 | --- | 4 | V |
| Forward Transconductance (VDS > ID(on) X RDS(on) Max, IDS=20 A) | | g _{fs} | 9 | 11 | --- | S(Ω) |
| Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125° C) | | IDSS | --- | --- | 250 1000 | μA |
| Gate to Source Leakage Forward Gate to Source Leakage Reverse | At rated VGS | IGSS | --- | --- | 100 100 | nA |
| Total Gate Charge Gate to Source Charge Gate to Drain Charge | VGS=10 Volts 80% rated VDS Rated ID | Q _g Q _{gs} Q _{gd} | --- | 63 15 60 | 120 25 75 | nC |
| Turn on Delay Time Rise Time Turn Off Delay Time Fall Time | VDD= 24 V ID= 20 A RG= 6.2 Ω | td(on) tr td(off) tf | --- | --- | 35 100 125 100 | nsec |
| Diode Forward Voltage (IS= 40 A, VGS=0 V, T _J =25° C) | | VSD | --- | --- | 2.5 | V |
| Diode Reverse Recovery Time Reverse Recovery Charge | T _J =25° C IF=40 A di/dt=100 A/μsec | t _{rr} Q _{RR} | --- | 600 3.3 | --- | nsec μC |
| Input Capacitance Output Capacitance Reverse Transfer Capacitance | VGS=10 Volts VDS=25 Volts f= 1 MHz | C _{iss} C _{oss} C _{rss} | --- | 2000 1000 350 | 3600 1500 500 | pF |

For thermal derating curves and other characteristic curves please contact SSDI Marketing Department.