

SSDI

SOLID STATE DEVICES, INC

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

Designer's Data Sheet

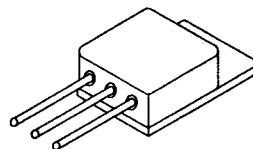
FEATURES:

- Rugged construction with polysilicon 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
- Ceramic Seals for improved hermeticity
- Hermetically sealed package
- TX, TXV and Space Level screening available
- Replaces: IRF430 Types

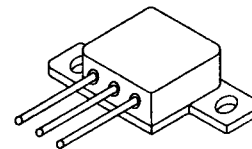
SFF430M
SFF430Z

4.5 AMP
500 VOLTS
1.5 Ω
N-CHANNEL
POWER MOSFET

TO-254



TO-254Z



MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	500	Volts
Gate to Source Voltage	V _{GS}	± 20	Volts
Continuous Drain Current	I _D	4.5	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	2	°C/W
Total Device Dissipation @ TC=25°C	P _D	63	Watts
Total Device Dissipation @ TC=55°C		48	

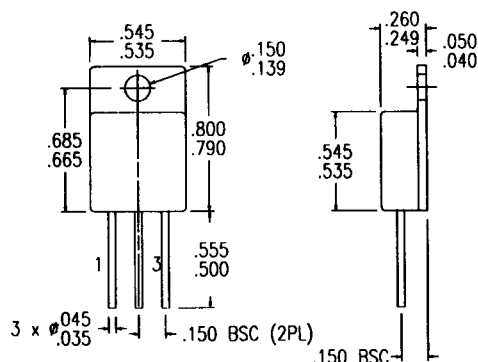
PACKAGE OUTLINE: TO-254

PIN OUT:

PIN 1: DRAIN

PIN 2: SOURCE

PIN 3: GATE



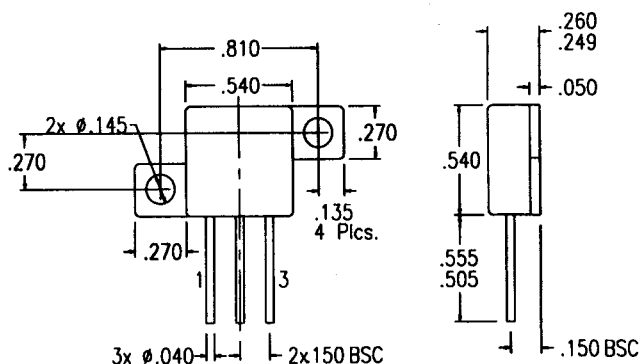
PACKAGE OUTLINE: TO-254Z

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 #: F00121 B

MED

SFF430M

SFF430Z

SOLID STATE DEVICES, INC

 14849 Firestone Boulevard · La Mirada, CA 90638
 Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424
ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=250\mu\text{A}$)		BV_{DSS}	500	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=2.5\text{ A}$)		$R_{DS(on)}$	---	1.4	1.5	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)		$I_D(on)$	4.5	---	---	A
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)		$V_{GS(th)}$	2.0	---	4.0	V
Forward Transconductance ($V_{DS} \geq 10\text{ V}$, $I_{DS}=2.5\text{ A}$)		g_{fs}	2.7	4.1	---	S(V)
Zero Gate Voltage Drain Current ($V_{DS}=\text{max rated voltage}$, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)		I_{DSS}	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V_{GS}	I_{GSS}	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 80% rated V_{DS} Rated I_D	Q_g Q_{gs} Q_{gd}	---	21 3.2 11	32 4.8 17	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} $I_D=4.5\text{ A}$ $R_G=12\ \Omega$ $R_D=56\ \Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	11 15 35 15	17 23 53 23	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)		V_{SD}	---	---	1.6	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=\text{rated } I_D$ $di/dt=100\text{ A}/\mu\text{sec}$	t_{rr} Q_{RR}	180 0.96	370 2.0	760 4.3	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$	C_{iss} C_{oss} C_{rss}	---	610 91 18	---	pF

 SAFE OPERATING AREA (S.O.A.)
 $T_C = 25^\circ\text{C}$, D.C. CONDITION
