


SOLID STATE DEVICES, INC

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

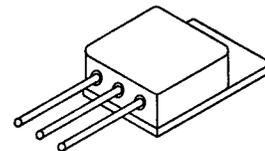
Designer's Data Sheet

FEATURES:

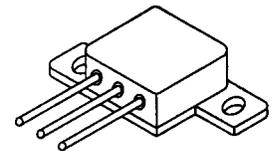
- Rugged construction with poly silicon gate
- Low RDS(on) and high transconductance
- Excellent high temperature stability
- Very fast switching speed
- Fast recovery and superior dv/dt performance
- Increased reverse energy capability
- Low input and transfer capacitance for easy paralleling
- Hermetically sealed power package
- TX, TXV and Space Level screening available
- Replaces: IRFM054 Types

SFFX054M
SFFX054Z
35 AMP
60 VOLTS
0.022Ω
N CHANNEL
POWER MOSFET

TO-254



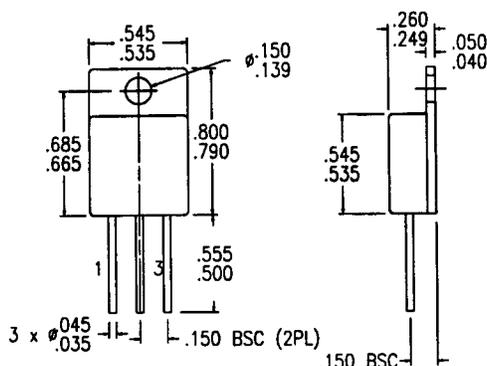
TO-254Z



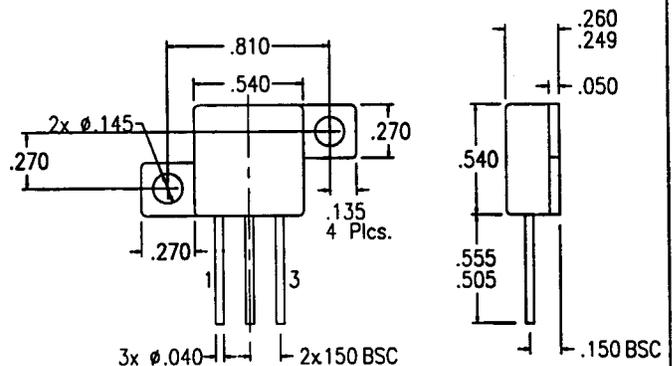
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	60	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	35	Amps
Operating and Storage Temperature	Top & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	0.83	°C/W
Total Device Dissipation @ TC=25°C	P _D	150	Watts
Total Device Dissipation @ TC=55°C		114	

PACKAGE OUTLINE: TO-254

 PIN OUT:
 PIN 1: GATE
 PIN 2: DRAIN
 PIN 3: SOURCE


PACKAGE OUTLINE: TO-254Z

 PIN OUT:
 PIN 1: GATE
 PIN 2: DRAIN
 PIN 3: SOURCE


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 #: F00321 A

SFFX054M
SFFX054Z

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ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=1\text{mA}$)		BV_{DSS}	60	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=60\%$ Rated ID)		$R_{DS(on)}$	---	0.017	0.022	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)		$I_D(on)$	35	---	---	A
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)		$V_{GS(th)}$	2.0	2.6	4.0	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=35\text{A}$)		g_{fs}	20	45	---	$S(\Omega)$
Zero Gate Voltage Drain Current ($V_{DS}=80\%$ max rated voltage, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated VDS, $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)		I_{DSS}	---	---	25 250	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	I_{GSS}	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 80% rated VDS Rated ID	Q_g Q_{gs} Q_{gd}	80 10 34	---	180 45 105	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated VDS $I_D=35\text{A}$ $R_G \leq 6.2\Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	30 20 60 30	33 180 100 100	nsec
Diode Forward Voltage ($I_S=\text{rated ID}$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)		V_{SD}	---	1.1	2.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=10\text{A}$ $di/dt=100\text{ A}/\mu\text{sec}$	t_{rr} Q_{RR}	---	---	280 2.2	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}	---	4600 2000 340	---	pF

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