



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFF30N60

Screening ^{2/} = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Lead Option ^{3/} = Straight Leads

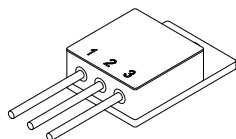
DB = Down Bend

UB = Up Bend

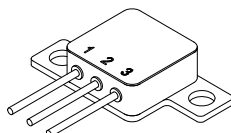
Package ^{3/} M = TO-254

Z = TO-254Z

TO-254 (M)



TO-254Z (Z)



SFF30N60M

SFF30N60Z

30 AMP / 600 Volts

Typ 0.23 Ω

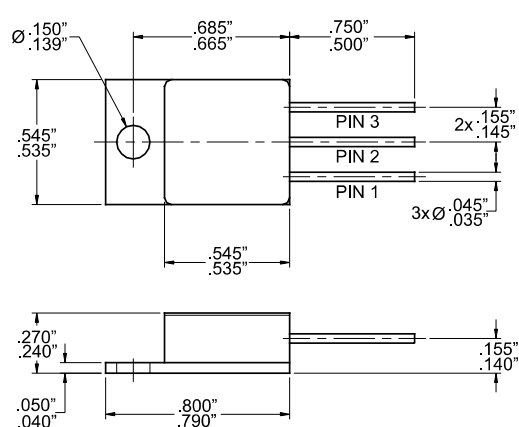
N-Channel POWER MOSFET

Features:

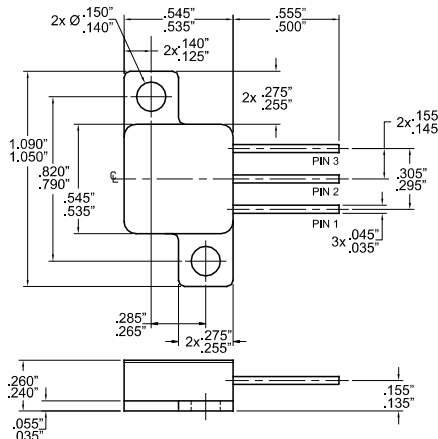
- Rugged Construction with Polysilicon Gate
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Hermetically Sealed, Isolated Surface Mount Power Package
- Ceramic Seals for Improved Hermeticity
- TX, TXV, S-Level screening available

Maximum Ratings	Symbol	Value	Units
Drain – Source Voltage	V_{DS}	600	Volts
Gate – Source Voltage	V_{GS}	± 30	Volts
Continues Drain Current	I_D	30	Amps
Avalanche Energy, repetitive	E_{AR}	0.05	J
Avalanche energy, single pulse	E_{AS}	1.5	J
Power Dissipation	P_D	150 114	W
		$T_C = 25^\circ C$ $T_C = 55^\circ C$	
Operating & Storage Temperature	Top & Tstg	-55 to +175	$^\circ C$
Maximum Thermal Resistance	$R_{\theta JC}$	0.83	$^\circ C/W$
Junction to Case			

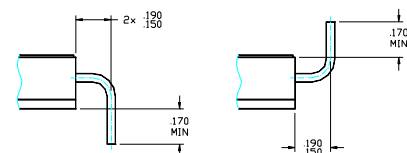
Case Outline: TO-254 (M)



Case Outline: TO-254Z (Z)



Optional Lead Bend Configuration



MDB & ZDB

MUB & ZUB

Suffixes

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

DATA SHEET #: F00201E

DOC

**Solid State Devices, Inc.**

14701 Firestone Blvd * La Mirada, Ca 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

SFF30N60M

SFF30N60Z

Electrical Characteristics ^{3/}		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (V _{GS} = 0V, I _D = 250μA)		BV _{DSS}	600	—	—	Volts
Drain to Source On State Resistance (V _{GS} = 10V) I _D = 25A I _D = 15A I _D = 15A, 125°C		R _{DS(on)1}	—	0.26	0.30	Ω
		R _{DS(on)2}	—	0.23	—	
		R _{DS(on)3}	—	0.45	—	
Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 4mA)		V _{GS(th)}	2.5	4.3	5	V
Gate to Source Leakage (At Rated V _{GS})		I _{GSS}	—	—	±100	nA
Zero Gate Voltage Drain Current (V _{GS} = 0V) V _{DS} = Rated, T _A = 25°C V _{DS} = Rated, T _A = 125°C		I _{DSS1}	—	—	25	μA
		I _{DSS2}	—	—	250	μA
Forward Transconductance * (V _{DS} > I _{D(on)} × R _{DS(on)} Max, I _{DS} = 50% Rated ID)		g _{fs}	10	20	—	Mho
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V _{GS} = 10V	Q _g	—	80	120	nC
	V _{DS} = 300V	Q _{gs}	—	30	50	
	I _D = 16.5A	Q _{gd}	—	24	45	
Turn on Delay Time Rise Time Turn on Delay Time Fall Time	V _{DD} = 300V I _D = 16.5A R _G = 2Ω	t _{d(on)}	—	28	40	nsec
		t _r	—	30	60	
		t _{d(off)}	—	80	150	
		t _f	—	25	60	
Diode Forward Voltage * (I _S = Rated I _D , V _{GS} = 0V, T _J = 25°C)		V _{SD}	—	0.875	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge (I _F = 10A, di/dt = 100A/μsec, T _J = 25°C)		t _{rr}	—	200	250	nsec μC
		Q _{RR}	—	0.95	—	
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V _{GS} = 0V	C _{iss}	—	5200	—	pF
	V _{DS} = 25V	C _{oss}	—	460	—	
	f = 1MHz	C _{rss}	—	30	—	

NOTES:

* Pulse test: pulse width = 300 μsec , duty cycle = 2%

1/ For ordering information, price, and availability - contact factory.

2/ Screening based on MIL-PRF-19500. Screening flows available on request.

3/ Unless otherwise specified, all electrical characteristics @25°C.

Available Part Numbers:

SFF30N60M; SFF30N60MDB; SFF30N60MUB;
SFF30N60Z; SFF30N60ZDB; SFF30N60ZUB;

PIN ASSIGNMENT (Standard)

Package	Drain	Source	Gate
TO-254 (M)	Pin 1	Pin 2	Pin 3
TO-254Z (Z)	Pin 1	Pin 2	Pin 3

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

DATA SHEET #: F00201E

DOC