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

SFF75N10M
SFF75N10Z

75 AMP
N-CHANNEL
POWER MOSFET
100 Volts
0.018 Ω

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

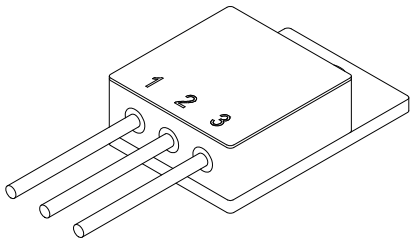
SFF75N10 ___

- **Screening** [2/] ___ = Not Screened
  TX = TX Level
  TXV = TXV Level
  S = S Level
- **Lead Option** ___ = Straight Leads
  DB = Down Bend
  UB = Up Bend
- **Package** M = TO-254
  Z = TO-254Z

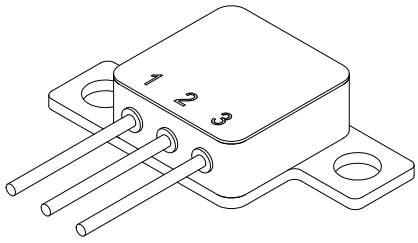
Features:
- Rugged Construction with Polysilicon Gate
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Ceramic Seals for Improved Hermeticity
- Hermetically Sealed Package
- TX, TXV, Space Level Screening Available

Maximum Ratings [3/]		Symbol	Value	Units
Drain – Source Voltage		V_{DS}	100	**Volts**
Gate – Source Voltage	Continuous transient	V_{GS}	±20 ±30	**Volts**
Collector Current	Continuous peak	I_D	56 [4/] 140	**Amps**
Operating & Storage Temperature		**Top & Tstg**	-55 to +175	**ºC**
Maximum Thermal Resistance Junction to Case		$R_{\theta JC}$	0.83	**ºC/W**
Total Device Dissipation	T_C = 25ºC T_C = 55ºC	P_D	180 144	**W**
Avalanche Energy	**repetitive** **Single pulse**	E_{AR} E_{AS}	80 2500	**mJ**

TO-254 (M)



TO-254Z (Z)



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 @25ºC

4/ Maximum Current Limited by Package, Die Rated at 140A.

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SFF75N10M
SFF75N10Z

Electrical Characteristics @ T_J = 25ºC (Unless Otherwise Specified)		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage V_{GS}= 0 V, I_D= 1 mA		BV_{DSS}	100	—	—	V
Drain to Source On State Resistance V_{GS}= 10 V	I_D= 37.5 A I_D= 75 A	$R_{DS(on)}$	— —	0.013 0.014	0.018 0.020	Ω
Gate Threshold Voltage V_{DS}= V_{GS}, I_D= 1 mA		$V_{GS(th)}$	3.0	4.3	5.0	V
Forward Transconductance V_{DS}>$I_{D(on)}$ X $R_{DS(on)}$ Max, I_{DS}= 37.5 A		g_{fs}	15	25	—	Smho
Zero Gate Voltage Drain Current V_{DS}= 100 V, V_{GS}= 0 V V_{DS}= 80 V, V_{GS}= 0 V, T_A= 125ºC		I_{DSS}	— —	0.005 5	25 250	µA
Gate to Source Leakage Forward **Gate to Source Leakage Reverse**	V_{DS}= 20 V	I_{GSS}	— —	5 5	+100 -100	nA
Total Gate Charge **Gate to Source Charge** **Gate to Drain Charge**	V_{GS}= 12 V V_{DS}= 50 V I_D= 75 A	Q_g Q_{gs} Q_{gd}	— — —	185 50 85	250 75 135	nC
Turn on Delay Time **Rise Time** **Turn off Delay Time** **Fall Time**	V_{DD}= 50 V I_D= 37.5 A R_G= 2.35 Ω V_{GS}= 10 V	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	— — — —	35 40 60 45	75 80 120 85	nsec
Diode Forward Voltage I_S= 75A, V_{GS}=0 V, T_J=25ºC		V_{SD}	—	1.1	1.5	V
Diode Reverse Recovery Time **Reverse Recovery Charge**	T_J= 25ºC I_F= 10 A di/dt= 100 A/µsec	t_{rr} Q_{RM}	— —	160 0.45	250 2.5	nsec µC
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	V_{GS}= 0 V V_{DS}= 25 V f= 1 MHz	C_{iss} C_{oss} C_{rss}	— — —	4800 2000 550	— — —	pF

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

Available Part Numbers:

SFF75N10M; SFF75N10MDB; SFF75N10MUB;
SFF75N10Z; SFF75N10ZDB; SFF75N10ZUB

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

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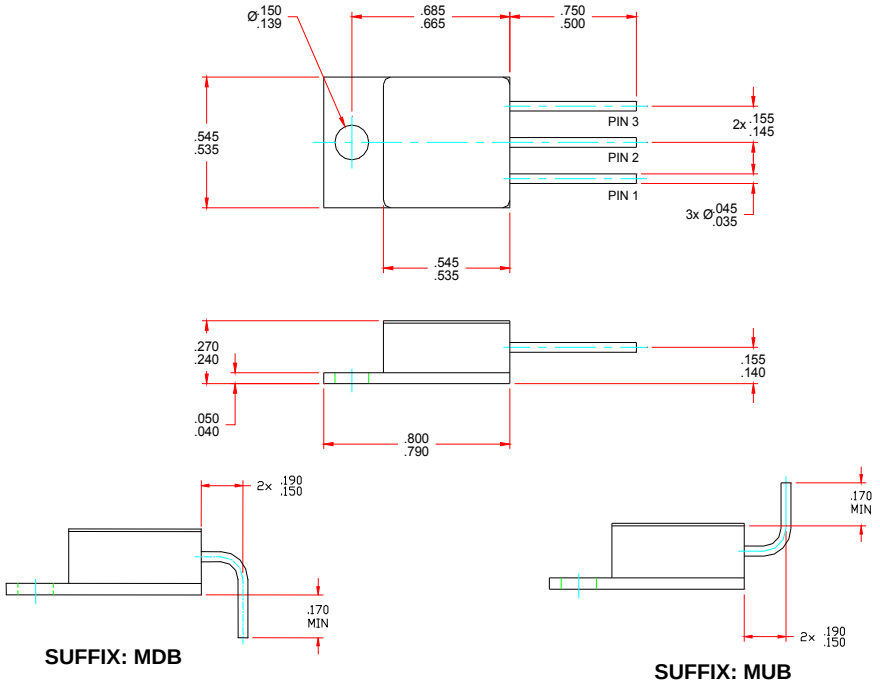
SFF75N10M
SFF75N10Z

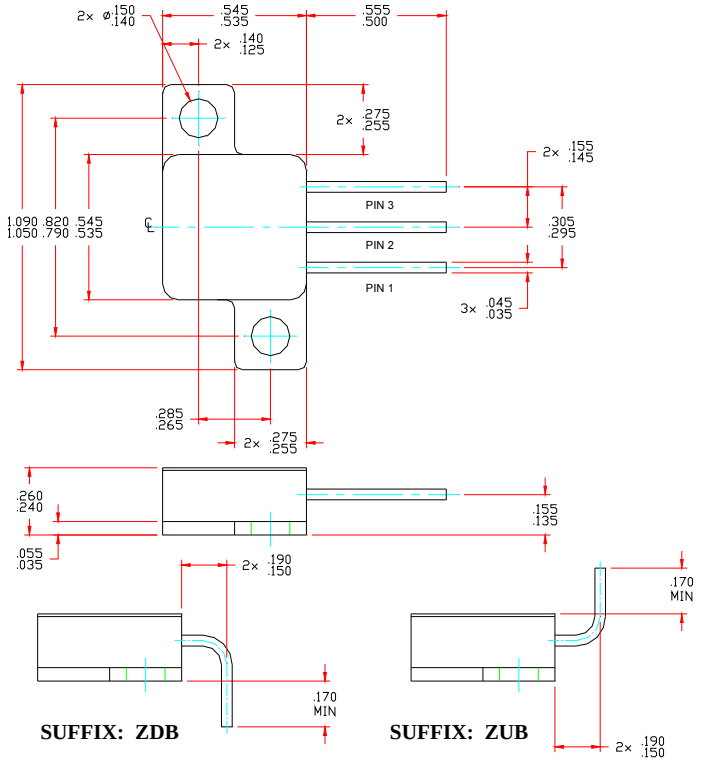
Case Outline: TO-254 (M)



SUFFIX: MDB

SUFFIX: MUB

Case Outline: TO-254Z (Z)



SUFFIX: ZDB

SUFFIX: ZUB

NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: F00153J**	**DOC**