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

SFF240J
SFF240JR

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFF240J ___ ___ ___

Screening [2/]
__ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Pin Configuration
__ = Normal
R = Reverse

Lead Bend
__ = Straight
UB = Up Bend
DB = Down Bend

15 AMP, 200 Volts, 0.18 Ω
N-Channel Power MOSFET

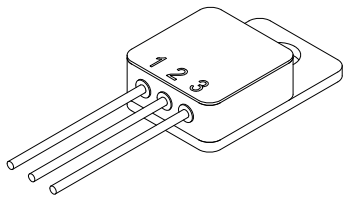
Features:

- 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
- Available with Ceramic Seal. Consult Factory
- Hermetically Sealed Isolated Power Package
- TX, TXV, S-Level screening available
- Replaces: IRFY240 and 2N7219 Types

Maximum Ratings		Symbol	Value	Units
Drain - Source Voltage		V_{DS}	200	V
Gate - Source Voltage	continuous transient	V_{GS}	±20 ±30	V
Max. Continuous Drain Current (package limited) @ 25°C		I_{D1}	15	A
Max. Instantaneous Drain Current (T_J limited) T_C = 25°C		I_{D2}	16	A
Max. Avalanche current	@ L = 0.1 mH	I_{AS}	15	A
Single Pulse Avalanche Energy	@ L = 0.1 mH	E_{AS}	450	mJ
Total Power Dissipation	@ T_C = 25°C @ T_C = 55°C	P_D	63 48	W
Operating & Storage Temperature		T_{OP} & T_{STG}	-55 to +150	°C
Maximum Thermal Resistance (Junction to Case)		$R_{\theta JC}$	2	°C/W

NOTES:
*Pulse Test: Pulse Width = 300μsec, 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/ Maximum current limited by package configuration
4/ Unless otherwise specified, all electrical characteristics @ 25°C.

TO-257



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: F00111C	DOC

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Electrical Characteristics [4/]		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage	V_{GS}= 0 V, I_D= 1 mA	BV_{DSS}	200	220	—	V
Drain to Source On State Resistance	V_{GS}= 10 V, I_D= 11 A, T_J= 25°C V_{GS}= 10 V, I_D= 11 A, T_J=125°C V_{GS}= 10 V, I_D= 18 A, T_J= 25°C	$R_{DS(on)}$	— — —	0.13 0.25 0.135	0.18 0.48 0.25	Ω
On State Drain Current	V_{DS} > $I_{D(on)}$ x $R_{DS(on)}$ Max, V_{GS}= 10 V, T_J= 25°C	$I_{D(on)}$	15	—	—	A
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= 250 µA, T_J= 25°C V_{DS}= V_{GS}, I_D= 250 µA, T_J= 125°C V_{DS}= V_{GS}, I_D= 250 µA, T_J= -55°C	$V_{GS(th)}$	2.0 1.0 —	3.0 2.2 3.5	4.0 — —	V
Forward Transconductance	V_{DS} ≥ 10 V, I_{DS}= 10 A, T_J= 25°C	g_{fs}	6.5	10	—	S (℧)
Zero Gate Voltage Drain Current	V_{DS}= max rated voltage, V_{GS}= 0 V, T_J= 25°C V_{DS}= max rated voltage, V_{GS}= 0 V, T_J= 125°C	I_{DSS}	— —	0.02 10	25 250	µA
Gate to Source Leakage Forward **Gate to Source Leakage Reverse**	At rated V_{GS}, T_J= 25°C	I_{GSS1}	— —	10 10	100 -100	nA
	At rated V_{GS}, T_J= 125°C	I_{GSS2}	— —	10 10	200 -200	
Total Gate Charge **Gate to Source Charge** **Gate to Drain Charge**	V_{GS}= 10 V V_{DS}= 100 V Rated I_D	Q_g Q_{gs} Q_{gd}	— — —	50 12 30	60 15 38	nC
Turn on Delay Time **Rise Time** **Turn off Delay Time** **Fall Time**	V_{DD}= 100 V I_D= 11 A R_G= 9.1 Ω V_{GS}= 10 V	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	— — — —	20 40 55 30	30 90 75 50	nsec
Diode Forward Voltage	I_S= Rated I_D, V_{GS}= 0 V, T_J= 25°C	V_{SD}	—	—	1.5	V
Diode Reverse Recovery Time **Reverse Recovery Charge**	T_J= 25°C, I_F= Rated I_D, di/dt= 100 A/µsec	t_{rr} Q_{rr}	— —	290 2.6	500 5.3	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}	— — —	1200 450 150	— — —	pF

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SFF240J
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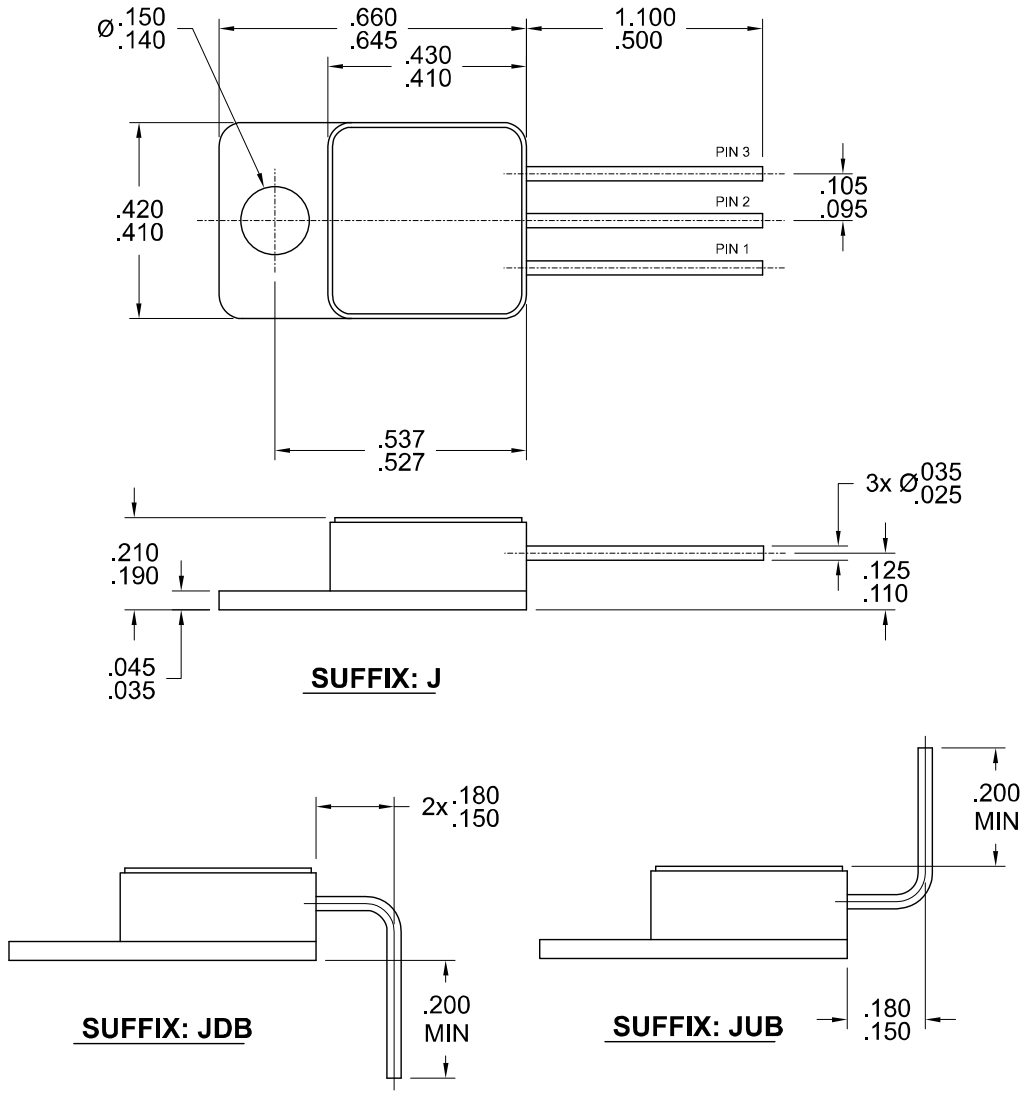
TO-257 (J)



PIN ASSIGNMENT (Standard)

Package	Pin 1	Pin 2	Pin 3
TO-257 (J)	Drain	Source	Gate
TO-257 (JR)	Gate	Drain	Source

Available Part Numbers:

SFF240J, SFF240JR, SFF240JUB, SFF240JUBR, SFF240JDB, SFF240JDBR

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