Solid State Devices, Inc.
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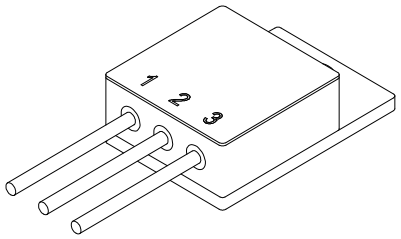
Phone: (562) 404-7855 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF20P10J

DESIGNER'S DATA SHEET

TO-257



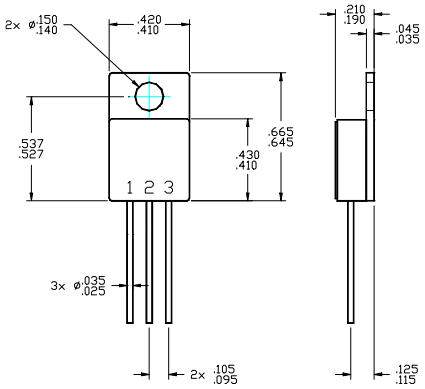
20 AMP /100 Volts
200 mW
P-Channel MOSFET

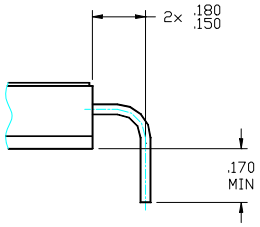
Features:

- Rugged construction with polysilicon gate
- Low ON-resistance and high transconductance
- Excellent high temperature stability
- Hermetically Sealed, Isolated Package
- Low Total Gate Charge
- Fast Switching
- replacement for IRF9140 types
- TX, TXV, S-Level screening available

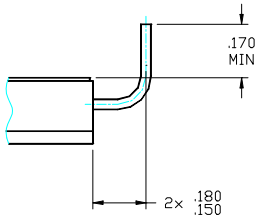
Maximum Ratings		Symbol	Value	Units
Drain - Source Voltage		V_{DSS}	-100	**V**
Gate – Source Voltage		V_{GS}	±20	**V**
Max. Continuous Drain Current (package limited)	**@ T_C = 25ºC** **@ T_C = 100ºC**	I_{D1} I_{D2}	20 11	**A**
Max. Avalanche current	**@ L= 0.1 mH**	I_{AR}	20	**A**
Repetitive Avalanche Energy	**@ L= 0.1 mH**	E_{AR}	12.5	**mJ**
Single Pulse Avalanche Energy	**@ L= 0.1 mH**	E_{AS}	500	**mJ**
Total Power Dissipation	**@ T_C = 25ºC**	P_D	100	**W**
Operating & Storage Temperature		T_{OP} & T_{STG}	-55 to +150	**ºC**
Maximum Thermal Resistance (Junction to Case)		$R_{\theta JC}$	1.25	**ºC/W**

PACKAGE OUTLINE:
TO-257 (J)
PINOUT:
PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE





SUFFIX JDB



SUFFIX JUB

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

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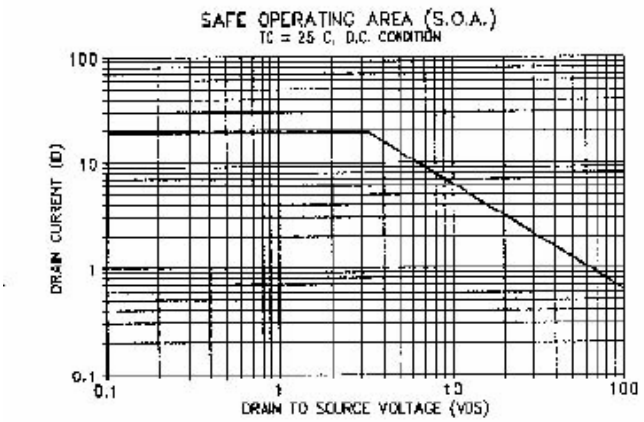
Electrical Characteristics [4/]		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage	V_{GS} = 0V, I_D = 1 mA	BV_{DSS}	-100	—	—	V
Drain to Source On State Resistance	V_{GS} = 10V, I_D = 11A, Tj= 25°C V_{GS} = 10V, I_D = 20A, Tj= 25°C	$R_{DS(on)}$	— —	140 150	200 230	mΩ
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250µA	$V_{GS(th)}$	-2.0	—	-4.0	V
Gate to Source Leakage	V_{GS} = ±20V	I_{GSS}	—	5	±100	nA
Zero Gate Voltage Drain Current	V_{DS} = -80V, V_{GS} = 0V, T_j = 25°C V_{DS} = -80V, V_{GS} = 0V, T_j = 125°C	I_{DSS}	— —	0.01 0.75	25 250	µA µA
Forward Transconductance	V_{DS} = 10V min, I_D = 11A, T_j = 25°C	g_{fs}	6	55	—	Mho
Total Gate Charge **Gate to Source Charge** **Gate to Drain Charge**	V_{GS} = 10V V_{DS} = 50V I_D = 18A	Q_g Q_{gs} Q_{gd}	— — —	55 12 29	70 15 45	nC
Turn on Delay Time **Rise Time** **Turn off Delay Time** **Fall Time**	V_{GS} = 10V V_{DS} = 50V I_D = 18A R_G = 9.1Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	— — — —	30 27 70 45	35 85 85 65	nsec
Diode Forward Voltage	I_F = 20A, V_{GS} = 0V	V_{SD}	—	1.90	4.20	V
Diode Reverse Recovery Time **Peak Reverse Recovery Current** **Reverse Recovery Charge**	I_F = 20A, di/dt = 100A/usec	t_{rr} Q_{rr}	—	270 2	350 3.6	nsec µC
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	V_{GS} = 0V V_{DS} = 25V f = 1 MHz	C_{iss} C_{oss} C_{rss}	— — —	1400 600 180	1650 740 260	pF

NOTES:

* Pulse Test: Pulse Width = 300µsec, Duty Cycle = 2%.

4/ Unless Otherwise Specified, All Electrical Characteristics @25°C.



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