Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4470 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF9140-28

-18 AMP
-100 Volts
0.20 Ω
P-Channel
POWER MOSFET

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFF9140 -28

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

Package
-28 = LCC28

Features:
- Rugged Construction with Poly Silicon 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
- TX, TXV, and Space Level Screening Available. Consult Factory.
- Replaces IRF9140 Types

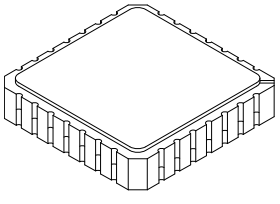
Maximum Ratings [3/]		Symbol	Value	Unit
Drain – Source Voltage		V_{DS}	-100	V
Gate – Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25ºC T_C = 100ºC	I_D	18 11	A
Operating & Storage Temperature		T_{OP} & T_{STG}	-55 to +150	ºC
Thermal Resistance, Junction to Case		$R_{\theta JC}$	3.5	ºC/W
Total Device Power Dissipation	T_C = 25ºC T_C = -55ºC	P_D	36 27	W
Single Pulse Avalanche Energy		E_{AS}	500	mJ
Repetitive Avalanche Energy		E_{AR}	12.5	mJ

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.

LCC28



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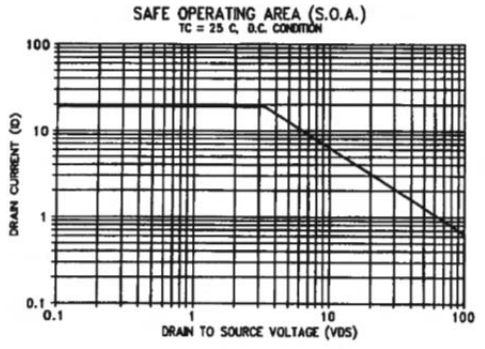
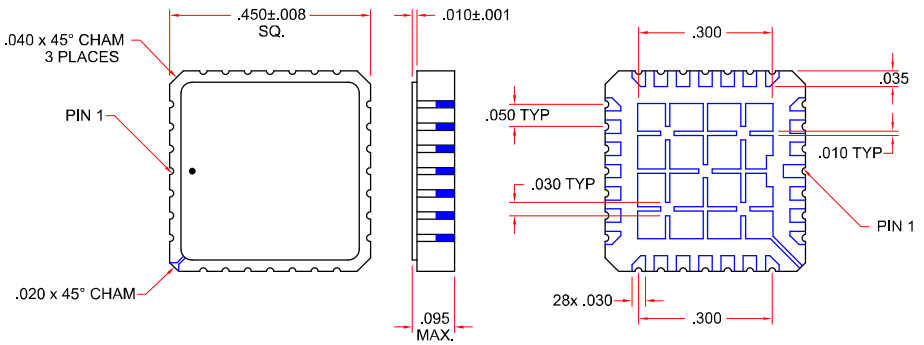
Electrical Characteristics[3/]		Symbol	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage (V_{GS} = 0 V, I_D = 1 mA)		BV_{DSS}	-100	—	—	V
Drain to Source On State Resistance (V_{GS} = -10 V)	I_D = 11 A I_D = 18 A	$R_{DS(ON)}$	— —	0.15 —	0.20 0.23	Ω
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta T_J}$	—	-0.087	—	A
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = -250 µA)		$V_{GS(th)}$	-2.0	—	-4.0	V
Forward Transconductance (V_{DS} ≥ 15 V, I_{DS} = 11 A)		g_{fs}	6.2	8	—	S(℧)
Zero Gate Voltage Drain Current (V_{DS} = 80% rated voltage, V_{GS} = 0 V) (V_{DS} = 80% rated voltage, V_{GS} = 0 V)	 T_A = 25°C T_A = 125°C	I_{DSS}	 — —	 — —	 25 250	µA
Gate to Source Leakage Forward **Gate to Source Leakage Reverse**	At Rated V_{GS}	I_{GSS}	— —	— —	-100 100	nA
Total Gate Charge **Gate to Source Charge** **Gate to Drain Charge**	V_{GS} = -10 V 50% rated V_{DS} I_D = 18 A	Q_g Q_{gs} Q_{gd}	31 — 7	50 3 25	70 18 45	nC
Turn on Delay Time **Rise Time** **Turn off Delay Time** **Fall Time**	V_{DD} = 50% rated V_{DS} rated I_D R_G = 9.1 Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	— — — —	15 8 35 20	35 85 85 65	ns
Diode Forward Voltage (I_S = Rated I_D, V_{GS} = 0 V, T_J = 25°C)		V_{SD}	—	—	-4.2	V
Diode Reverse Recovery Time **Reverse Recovery Charge**	T_J = 25°C I_F = 10 A di/dt = 100 A/µsec	t_{rr} Q_{RR}	— —	170 —	280 3.6	ns 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}	— — —	1400 600 200	— — —	pF



CASE OUTLINE: LCC28



PIN OUT: SOURCE: 1, 15 – 28 DRAIN: 5 – 11 GATE: 2, 3, 13, 14