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

SFL630 series

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFL630 J ___ ___

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

Lead Options
(for TO-257 package)
___ = Straight Leads
DB = Down Bend
UB = Up Bend

Package
J = TO-257
S.5= SMD.5
G= Cerpack

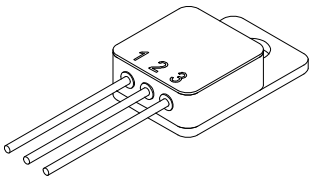
Logic Level
10 AMP, 200 Volts, 400 mΩ
Avalanche Rated N-MOSFET

Features:
- Rugged Technology
- Very low ON-resistance: 200mΩ typ
- Avalanche rated
- Hermetically Sealed Power Packaging
- Low Total Gate Charge, Fast Switching
- Enhanced performance replacement for IRL630 types and 2N6904
- TX, TXV, S-Level screening available

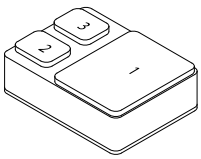
Maximum Ratings [3/]		Symbol	Value	Units
Drain - Source Voltage		V_{DSS}	200	V
Gate – Source Voltage, continuous **Gate – Source Voltage, transient**		V_{GS}	±10 ±15	V
Max. Continuous Drain Current (package limited)	**@ T_C = 25ºC** **@ T_C = 100ºC**	I_{D1} I_{D2}	10 6	A
Max. Avalanche Current	**@ L= 5.0mH**	I_{AR}	10	A
Single Pulse Avalanche Energy	**@ L= 5.0mH**	E_{AS}	250	mJ
Total Power Dissipation @ T_C = 25ºC	**TO-257** **SMD.5, Cerpack**	P_D	120 150	W
Operating & Storage Temperature		T_{OP} & T_{STG}	-55 to +175	ºC
Maximum Thermal Resistance (Junction to Case)	**TO-257** **SMD.5, Cerpack**	$R_{\theta JC}$	3.5 1.70	ºC/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/ Unless otherwise specified, all electrical characteristics @25°C.

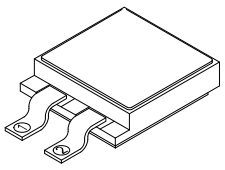
TO-257 (J)



SMD.5 (S.5)



Cerpack (G)



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

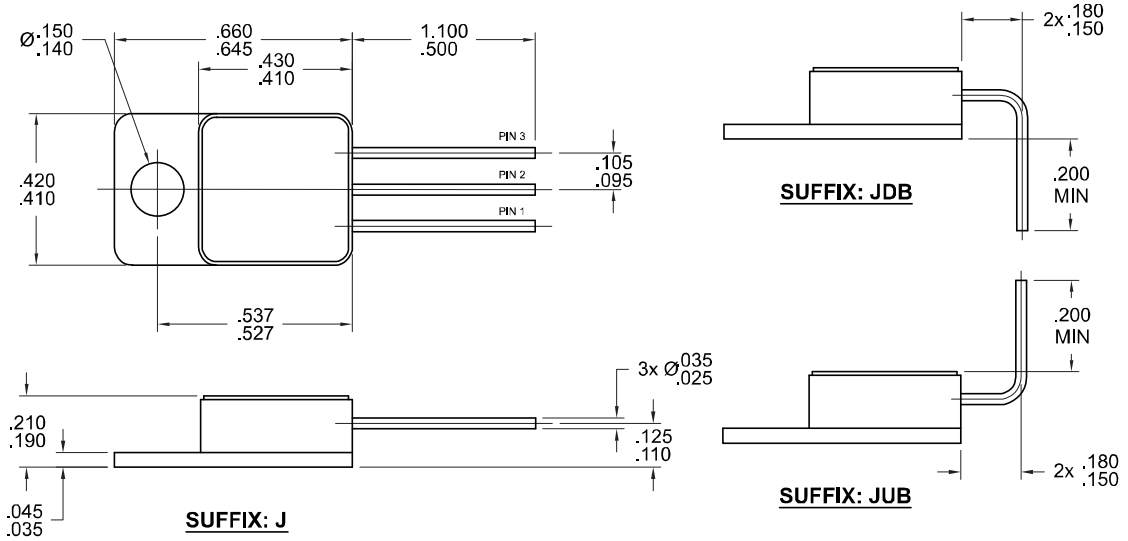
SFL630 series

Electrical Characteristics[3/]		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage	V_{GS} = 0V, I_D =0.25 mA	BV_{DSS}	200	225	-	V
Drain to Source On State Resistance	V_{GS} = 5V, I_D = 5A, Tj= 25°C V_{GS} = 5V, I_D = 10A, Tj= 25°C V_{GS} = 4V, I_D = 5A, Tj= 25°C V_{GS} = 5V, I_D = 10A, Tj= 125°C	$R_{DS(on)}$	- - - -	200 250 200 400	400 500 - -	mΩ
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 1mA, Tj= 25°C V_{DS} = V_{GS}, I_D = 1mA, Tj= 125°C V_{DS} = V_{GS}, I_D = 1mA, Tj= -55°C	$V_{GS(th)}$	1.0 0.5 -	1.6 1.0 2.0	2.0 - 3.0	V
Gate to Source Leakage	V_{GS} = ±10V, Tj= 25°C V_{GS} = ±10V, Tj= 125°C	I_{GSS}	- -	1 10	±100 ±200	nA
Zero Gate Voltage Drain Current	V_{DS} = 200V, V_{GS} = 0V, T_j = 25°C V_{DS} = 160V, V_{GS} = 0V, T_j = 125°C	I_{DSS}	- -	0.01 100	1 250	µA µA
Forward Transconductance	V_{DS} = 50V, I_D = 5.4A, T_j = 25°C	g_{fs}	3	6	-	Mho
Total Gate Charge **Gate to Source Charge** **Gate to Drain Charge**	V_{GS} = 10V V_{DS} = 100V I_D = 8A	Q_g Q_{gs} Q_{gd}	- - -	42 6 15	70 10 24	nC
Turn on Delay Time **Rise Time** **Turn off Delay Time** **Fall Time**	V_{GS} = 10V V_{DS} = 100V I_D = 9A R_G = 6Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	- - - -	7.5 15 75 30	15 30 110 45	nsec
Diode Forward Voltage	I_F = 10A, V_{GS} = 0V	V_{SD}	-	0.85	2.0	V
Diode Reverse Recovery Time **Peak Reverse Recovery Current** **Reverse Recovery Charge**	I_F = 9A, di/dt = 100A/usec	t_{rr} Q_{rr}	- -	190 1	350 -	nsec uC
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	V_{GS} = 0V V_{DS} = 25V f = 1 MHz	C_{iss} C_{oss} C_{rss}	- - -	1100 450 60	- - -	pF

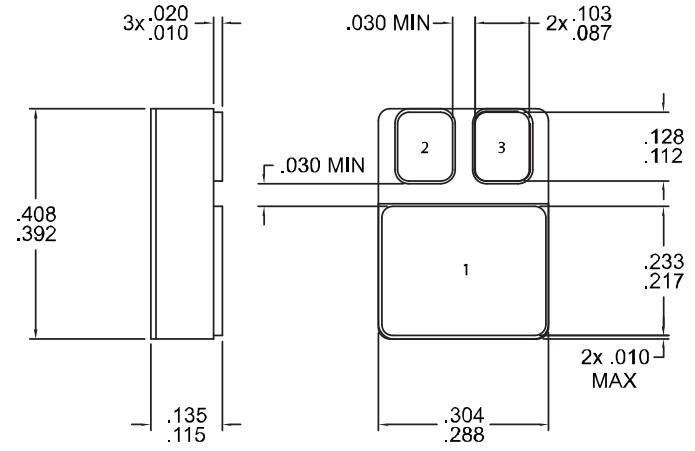
Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFL630 series

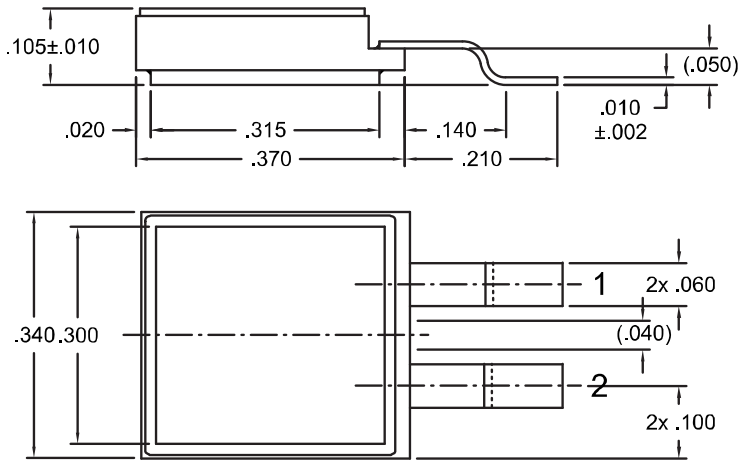
PACKAGE OUTLINE:
TO-257 (J)
PINOUT:
PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



PACKAGE OUTLINE:
SMD.5 (S.5)
PINOUT:
PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



PACKAGE OUTLINE:
Cerpack (G)
PINOUT:
PIN 1: DRAIN
PIN 2: SOURCE
BOTTOM PAD: GATE



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: FT0057A**	**DOC**