



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

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFF35N70

Screening ^{2/}

— = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Lead Option ^{3/}

— = Straight Leads
DB = Down Bend
UB = Up Bend

Package ^{3/ 4/}

M = TO-254 N = TO-258
Z = TO-254Z P = TO-259

SFF35N70 Series

35 AMP , 700 Volts, 90 mΩ Avalanche Rated N-channel MOSFET

Features:

- Rugged poly-Si gate
- Lowest ON-resistance in the industry
- Avalanche rated
- Hermetically Sealed, Isolated Package
- Low Total Gate Charge
- Fast Switching
- TX, TXV, S-Level screening available
- Improved ($R_{DS(ON)}$) Q_G figure of merit

Maximum Ratings ^{5/}		Symbol	Value	Units
Drain - Source Voltage		V_{DSS}	700	V
Gate - Source Voltage	continuous transient	V_{GS}	± 20 ± 30	V
Continuous Drain Current (T_{OP} limited)	@ $T_C = 25^\circ C$ @ $T_C = 100^\circ C$	I_{D1} I_{D2}	35 22	A
Pulsed Drain Current (P_{width} / T_{OP} limited)	@ $T_C = 25^\circ C$	I_{D3}	110	A
Single and Repetitive Avalanche Energy	@ $L = 0.1$ mH	E_{AS} E_{AR}	1100 1.50	mJ
Total Power Dissipation	@ $T_C = 25^\circ C$	P_D	250	W
Operating & Storage Temperature		$T_{OP} \& T_{STG}$	-55 to +150	$^\circ C$
Thermal Resistance (Junction to Case)				



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

SFF35N70 Series

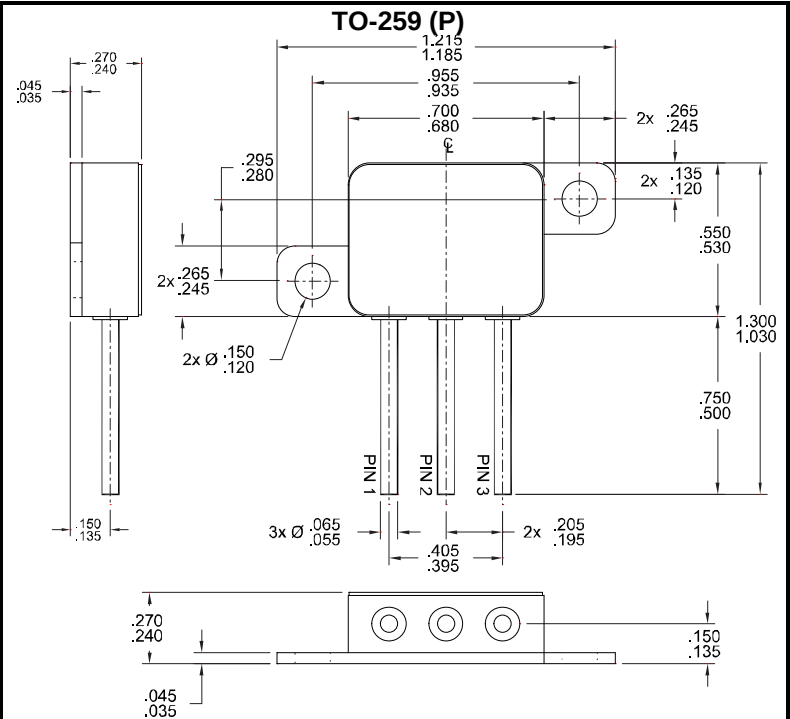
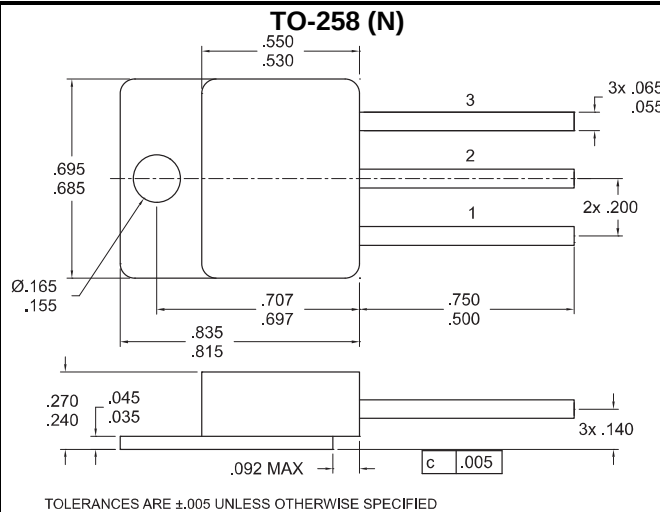
Electrical Characteristics ^{5/}		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage	$V_{GS} = 0V, I_D = 1\text{ mA}$	BV_{DSS}	700	740	—	V
Drain to Source On State Resistance	$V_{GS} = 10V, I_D = 18\text{ A}, T_j = 25^\circ\text{C}$	$R_{DS(on)}$	—	80	90	mΩ
	$V_{GS} = 10V, I_D = 18\text{ A}, T_j = 125^\circ\text{C}$		—	160	—	
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 1.75\text{ mA}, T_j = 25^\circ\text{C}$	$V_{GS(th)}$	3.5	4.2	4.5	V
	$V_{DS} = V_{GS}, I_D = 1.75\text{ mA}, T_j = 125^\circ\text{C}$		2.5	3.4	—	
	$V_{DS} = V_{GS}, I_D = 1.75\text{ mA}, T_j = -55^\circ\text{C}$		—	4.7	5.5	
Gate to Source Leakage	$V_{GS} = \pm 20V, T_j = 25^\circ\text{C}$	I_{GSS}	—	10	± 100	nA
	$V_{GS} = \pm 20V, T_j = 125^\circ\text{C}$		—	30	—	
Zero Gate Voltage Drain Current	$V_{DS} = 650V, V_{GS} = 0V, T_j = 25^\circ\text{C}$	I_{DSS}	—	1	25	μA
	$V_{DS} = 650V, V_{GS} = 0V, T_j = 125^\circ\text{C}$		—	15	150	μA
Total Gate Charge	$V_{GS} = 10V$	Q_g	—	170	250	nC
Gate to Source Charge	$V_{DS} = 480V$	Q_{gs}	—	35	65	
Gate to Drain Charge	$I_D = 27$					



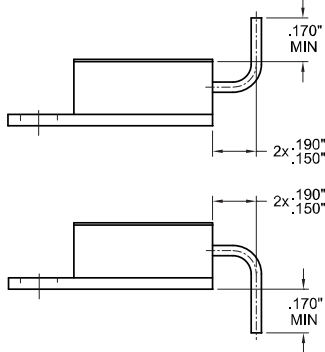
Solid State Devices, Inc.

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

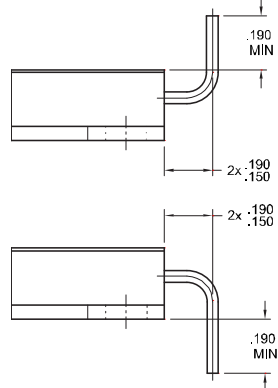
SFF35N70 Series



Lead Bend Options for TO-254 (M) and TO-254Z (Z)



Lead Bend Options for TO-258 (N) and TO-259 (P)



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
TO-258 (N)	Pin 1	Pin 2	Pin 3
TO-259 (P)	Pin 1	Pin 2	Pin 3

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

DATA SHEET #: FT0060D

DOCX