



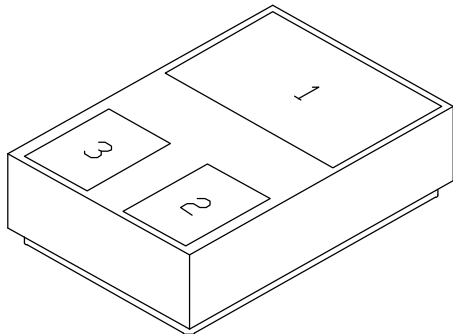
Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, CA 90638

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DESIGNER'S DATA SHEET



SMD.22

SFF110S.22

3.5 A / 100 Volts / 0.6 W
N-Channel MOSFET Transistor

Features:

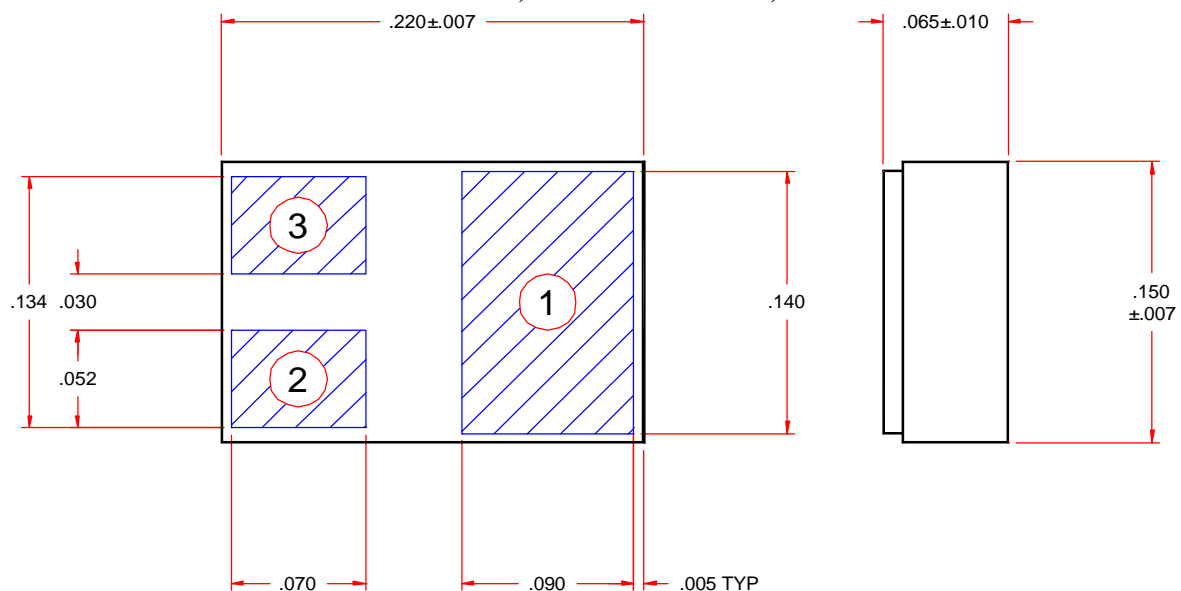
- Rugged Construction with Polysilicon Gate
- Small Footprint Hermetic Surface Mount Device with Excellent Thermal Properties
- Replacement/Enhancement for 2N6782
- TX, TXV, S-Level Screening Available
- Very Fast Switching Characteristics

Maximum Ratings	Symbol	Value	Units
Drain – Source Voltage	V_{DS}	100	Volts
Drain – Gate Voltage	V_{DG}	100	Volts
Gate – Source Voltage	V_{GS}	+/-20	Volts
Continuous Drain Current	I_{D1}	3.5	Amps
	I_{D2}	2.25	
Power Dissipation @ $T_C = 25^\circ C$	P_D	16.5	W
Power Dissipation @ $T_A = 25^\circ C$		0.8	
Operating & Storage Temperature	Top & Tstg	-55 to +150	$^\circ C$
Maximum Thermal Resistance Junction to Case and to Ambient	R_{qJC}	7.5 (typ 5)	$^\circ C/W$
	R_{qJA}	156.5	

Note1: Derated 60.6 mW/ $^\circ C$ above $T_C = 25^\circ C$

Note2: Derated 6.4 mW/ $^\circ C$ above $T_A = 25^\circ C$

PIN 1= COLLECTOR; PIN 2= EMITTER; PIN 3= BASE



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

DATA SHEET #: FT0015A

www.DataSheet4U.com

100C


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Electrical Characteristics ^{4/}	Symbol	Min	Typ	Max	Units
Drain – Source Breakdown Voltage	$V_{GS} = 0 \text{ V}; I_D = 1 \text{ mA}$ BV_{DSS}	100	—	—	Volts
Gate – Source Threshold Voltage	$V_{DS} = 4 \text{ V}; I_D = 0.25 \text{ mA}$ $V_{DS} = 4 \text{ V}; I_D = 0.25 \text{ mA}; T_A = 125^\circ\text{C}$ $V_{DS} = 5 \text{ V}; I_D = 0.25 \text{ mA}; T_A = -55^\circ\text{C}$ V_{GS(th)1} V_{GS(th)2} V_{GS(th)3}	2.0 — —	3.0 2.0 4.0	4.0 — —	Volts
Gate Leakage Current	$V_{GS} = \pm 20 \text{ V}$ $V_{GS} = \pm 20 \text{ V}, T_A = 125^\circ\text{C}$ I_{GSS1} I_{GSS2}	— —	5 10	100 —	nA
Drain Leakage Current	$V_{GS} = 0 \text{ V}; V_{DS} = 80 \text{ V}$ $V_{GS} = 0 \text{ V}; V_{DS} = 80 \text{ V}, T_A = 125^\circ\text{C}$ I_{DSS1} I_{DSS2}	— —	0.02 5	25 —	mA
Static Drain – Source On-State Resistance	$V_{GS} = 10 \text{ V}, I_D = 2.25 \text{ A}$ $V_{GS} = 10 \text{ V}, I_D = 3.50 \text{ A}$ R_{DS(on)1} R_{DS(on)2}	— —	0.55 0.58	0.60 0.61	Ohm
	$V_{GS} = 10 \text{ V}, I_D = 2.25 \text{ A}, T_A = 125^\circ\text{C}$ R_{DS(on)3}	—	1.05	—	
Forward Voltage of the Source – Drain Diode	$I_D = 3.5 \text{ A}$ V_{SD}	—	1.2	1.5	Volts
Switching Time Test: Turn-on Delay Time Rise Time Turn-off Delay Time Fall Time	$I_D = 3.5 \text{ A}, V_{GS} = 10 \text{ V},$ $R_G = 7.5 \text{ ohm}, V_{DD} = 50 \text{ V}$ t_{d(on)} t_r t_{d(off)} t_f	— — — —	— — — —	15 25 25 20	ns
Gate Charge Test: On-State Gate Charge Gate – Source Charge Gate – Drain Charge	$V_{GS} = 10 \text{ V}, V_{DS} = 50 \text{ V}$ Q_{g(on)} Q_{gs} Q_{gd}	— — —	— — —	6.55 1.61 3.46	nC
Reverse Recovery Time	$V_{DD} = 50 \text{ V}, I_D = 3.5 \text{ A},$ $dI/dt = 100 \text{ A}/\mu\text{s}$ t_{rr}	—	—	180	ns
Capacitance Test: Input Capacitance Output Capacitance Reverse Transfer Cap.	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$ C_{iss} C_{oss} C_{rss}	— — —	180 85 15	— — —	pF

NOTES:

* Pulse Test: Pulse Width = 300 μsec, Duty Cycle = 2%
 1/ For Ordering Information, Price, Availability Contact Factory.

2/ Screening per MIL-PRF-19500

3/ For Package Outlines Contact Factory.

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