



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/}

SFT8600

└ Screening ^{2/}
 ____ = No Screening
 TX = TX Level
 TXV = TXV Level
 S = S Level

Package

S.22 = SMD.22
 S.5 = SMD.5
 G = Cerpack

SFT8600S.22, SFT8600S.5 and SFT8600G

1 AMP NPN Transistor 1000 Volts

Features:

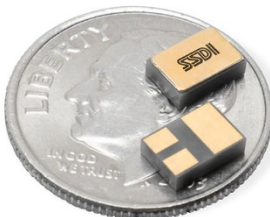
- BV_{CEO} minimum 400 volts
- Very low saturation voltage
- Very low leakage
- High gain from 20 mA to 250 mA
- 200°C operating temperature
- Gold eutectic die attach
- Superior performance over JEDEC 2N5010 - 2N5015 series
- High speed switching, t_f = 0.4 μs (typ)
- TX, TXV, and S level screening available

Maximum Ratings ^{3/}	Symbol	Max	Unit
Collector – Emitter Voltage	V _{CEO}	400	V
Collector – Emitter Voltage (RBE = 1KΩ)	V _{CER}	1000	V
Collector – Base Voltage	V _{CBO}	1000	V
Emitter – Base Voltage	V _{EBO}	6	V
Collector Current	I _C	1	A
Base Current	I _B	0.1	A
Power Dissipation @ T _C = 75°C Derate above 75°C	P _D	8.3 67	W mW/°C
Power Dissipation @ T _C = 75°C Derate above 75°C	P _D	25 200	W mW/°C
Operating & Storage Temperature	T _{OP} & T _{STG}	-65 to +200	°C
Thermal Resistance	R _{θJC}	15 5	°C/W

NOTES:

- ^{1/} For ordering information, price, operating curves, and availability, contact factory.
^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.
^{3/} Unless otherwise specified, maximum ratings/electrical characteristics at 25°C.

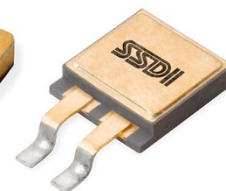
SMD.22 (S.22)



SMD.5 (S.5)



Cerpack (G)



*Dime used for size reference

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

DATA SHEET #: TR0083C

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SFT8600S.22, SFT8600S.5 and SFT8600G

Electrical Characteristics ^{3/}		Symbol	Min	Max	Unit
Collector – Emitter Breakdown Voltage	$I_C = 10 \text{ mA}$	BV_{CEO}	400	-	V
	$I_C = 20 \text{ } \mu\text{A}$, $R_{BE} = 1 \text{ K}\Omega$	BV_{CER}	1000	-	V
Collector – Base Breakdown Voltage	$I_C = 20 \text{ } \mu\text{A}$	BV_{CBO}	1000	-	V
Emitter – Base Breakdown Voltage	$I_E = 20 \text{ } \mu\text{A}$	BV_{EBO}	6	-	V
Collector Cutoff Current	$V_{CB} = 800 \text{ V}$	I_{CBO}	-	10	μA
	$V_{CB} = 800 \text{ V}$, $T_A = 150^\circ\text{C}$		-	500	
Collector Cutoff Current	$V_{CE} = 400 \text{ V}$	I_{CEO}	-	10	μA
Emitter Cutoff Current	$V_{EB} = 4 \text{ V}$	I_{EBO}	-	1	μA
DC Current Gain*	$I_C = 100 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $T_C = -55^\circ\text{C}$	H_{FE}	10	-	--
	$I_C = 5 \text{ mA}$, $V_{CE} = 5 \text{ V}$		30	-	
	$I_C = 10 \text{ mA}$, $V_{CE} = 5 \text{ V}$		40	200	
	$I_C = 100 \text{ mA}$, $V_{CE} = 5 \text{ V}$		20	-	
	$I_C = 250 \text{ mA}$, $V_{CE} = 5 \text{ V}$		15	-	
Collector-Emitter Saturation Voltage*	$I_C = 20 \text{ mA}$, $I_B = 2 \text{ mA}$	$V_{CE(SAT)}$	-	0.3	V
	$I_C = 100 \text{ mA}$, $I_B = 10 \text{ mA}$		-	0.5	
Base-Emitter Saturation Voltage*	$I_C = 20 \text{ mA}$, $I_B = 2 \text{ mA}$	$V_{BE(SAT)}$	-	0.8	V
	$I_C = 100 \text{ mA}$, $I_B = 10 \text{ mA}$		-	1.0	
Current Gain Bandwidth Product	$I_C = 100 \text{ mA}$, $V_{CE} = 10 \text{ V}$, $f = 10 \text{ MHz}$	f_T	8	-	MHz
Output Capacitance	$V_{CB} = 20 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1.0 \text{ MHz}$	C_{ob}	-	15	pF
Delay Time	$(V_{CC} = 125 \text{ V}$, $I_C = 100 \text{ mA}$, $I_{B1} = 20 \text{ mA}$, $I_{B2} = 40 \text{ mA})$	t_d	-	50	ns
Rise Time		t_r	-	150	ns
Storage Time		t_s	-	3	μs
Fall Time		t_f	-	800	ns

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

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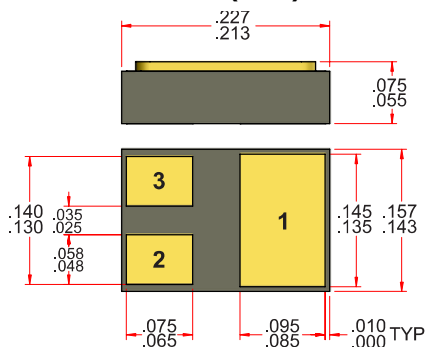
For thermal derating curves and other characteristic curves, please contact SSDI Marketing Department.

PIN ASSIGNMENT (Standard)

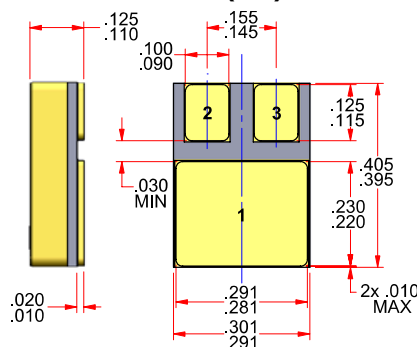
Package	Collector	Emitter	Base
SMD.22 (S.22)	Pin 1	Pin 2	Pin 3
SMD.5 (S.5)	Pin 1	Pin 2	Pin 3
Cerpack (G)	Pin 1 (bottom tab)	Pin 2	Pin 3

CASE OUTLINES

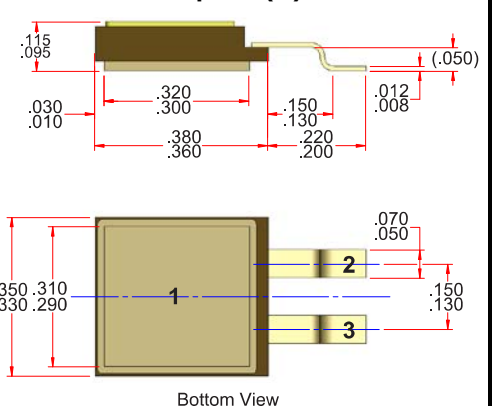
SMD.22 (S.22):



SMD.5 (S.5):



Cerpack (G):



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