



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/}

SFT628

Screening^{2/}

___ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Lead Options

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

Package

N = TO-258
P = TO-259

Polarity

4 = NPN
7 = PNP

SFT6284 (NPN) SFT6287 (PNP)

50 AMP NPN/PNP COMPLEMENTARY HIGH POWER DARLINGTON TRANSISTORS

Features:

- Enhanced V_{CEO} performance: 250V (NPN)/120V (PNP)
- Low Saturation Voltage
- 200°C Operating Temperature
- Hermetically Sealed, Isolated Power Package
- TX, TXV, S-Level Screening Available. Consult Factory.

Application Notes:

SFT6284/6287 Darlington Transistors are enhanced performance replacements for Motorola MJ11032/11033. Designed for high voltage, high speed, power switching in inductive circuits where fall time is critical. Particularly suited for line operated switchmode applications such as:

- Switching Regulators
- Inverters
- Solenoid and Relay Drives
- Motor Controls

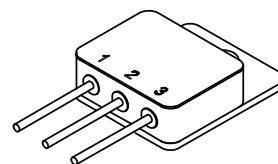
Maximum Ratings		Symbol	Value	Unit
Collector – Emitter Voltage	SFT6284	V_{CEO}	250	V
	SFT6287		120	
Collector – Base Voltage	SFT6284	V_{CBO}	350	V
	SFT6287		120	
Emitter – Base Voltage	SFT6284	V_{EBO}	5	V
	SFT6287		8	
Collector Current	Continuous	I_C	50	A
			100	
Base Current		I_B	2	A
Total Power Dissipation	@ $T_C = 25^\circ\text{C}$	P_D	350	W
	@ $T_C = 100^\circ\text{C}$		200	
Derate above 50°C			2	W/°C
Operating & Storage Temperature		T_J & T_{STG}	-65 to +200	°C
Maximum Thermal Resistance (Junction to Case)		$R_{\theta JC}$	0.5 (typ. 0.22)	°C/W

NOTES:

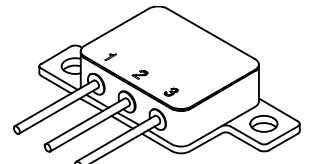
^{1/} For ordering information, price, operating curves, and availability - contact factory.

^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

TO-258 (N)



TO-259 (P)



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

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SFT6284 (NPN) SFT6287 (PNP)

Electrical Characteristics, $T_C = 25^\circ\text{C}$		Symbol	Min	Max	Unit
Collector – Emitter Breakdown Voltage ($I_C = 100\text{ mA}$, $I_B = 0$)	SFT6284 SFT6287	$V_{CEO(sus)}$	250 120	—	V
Collector Cutoff Current	$V_{CE} = 50\text{ V}$	I_{CEO}	—	0.5	mA
Collector Cutoff Current	$V_{CE} = 100\text{ V}$, $V_{BE(off)} = 1.5\text{ V}$	I_{CEX}	—	0.5	mA
Collector Cutoff Current	$V_{CE} = 50\text{ V}$, $R = 1\text{ k}\Omega$	I_{CER1}	—	1	mA
Collector Cutoff Current	$V_{CE} = 50\text{ V}$, $R = 1\text{ k}\Omega$, $T_A = 150^\circ\text{C}$	I_{CER2}	—	10	mA
Emitter Cutoff Current	$V_{EB} = 5\text{ V}$, $I_C = 0$	I_{EBO}	—	5	mA
DC Current Gain* ($V_{CE} = 3\text{ V}$)	$I_C = 10\text{ A}$	H_{FE1}	1000	18,000	
	$I_C = 20\text{ A}$	H_{FE2}	500	—	
DC Current Gain* ($V_{CE} = 5\text{ V}$)	$I_C = 25\text{ A}$	H_{FE3}	1000	18,000	
	$I_C = 50\text{ A}$	H_{FE4}	400	—	
Collector – Emitter Saturation Voltage*	$I_C = 10\text{ A}$, $I_B = 0.04\text{ A}$	$V_{CE(SAT)1}$	—	1.5	V
	$I_C = 25\text{ A}$, $I_B = 0.25\text{ A}$	$V_{CE(SAT)2}$	—	2.0	
	$I_C = 50\text{ A}$, $I_B = 0.50\text{ A}$	$V_{CE(SAT)3}$	—	3.0	
Base – Emitter Saturation Voltage*	$I_C = 25\text{ A}$, $I_B = 0.25\text{ A}$	$V_{BE(SAT)1}$	—	3.0	V
	$I_C = 50\text{ A}$, $I_B = 0.50\text{ A}$	$V_{BE(SAT)2}$	—	4.0	
Bandwidth ($V_{CE} = 3\text{ V}$, $f = 1\text{ MHz}$, $I_C = 5\text{ A}$)	SFT6284 SFT6287	f_T	2 1.5	—	MHz
Output Capacitance	$V_{CB} = 10\text{ V}$, $I_E = 0\text{ A}$, $f = 0.1 - 1\text{ MHz}$	C_{ob}	—	650	pF

NOTES: *Pulsed per MIL-STD-750.

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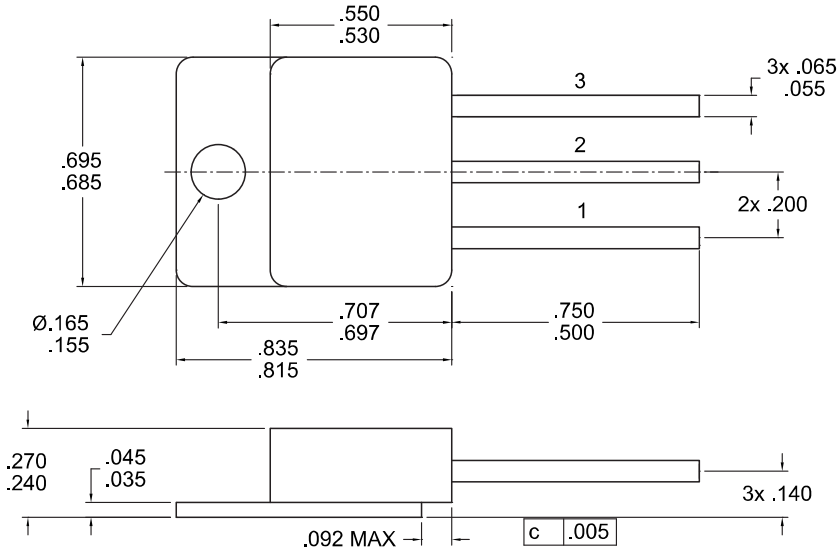


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SFT6284 (NPN) SFT6287 (PNP)

CASE OUTLINE: TO-258 (N)



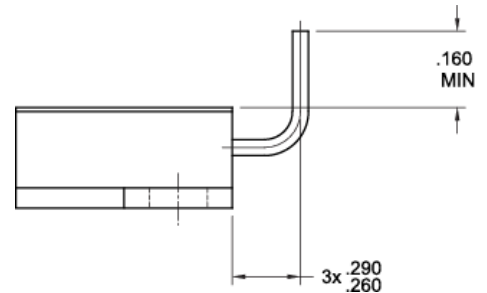
TOLERANCES ARE $\pm .005$ UNLESS OTHERWISE SPECIFIED

Pin Out:

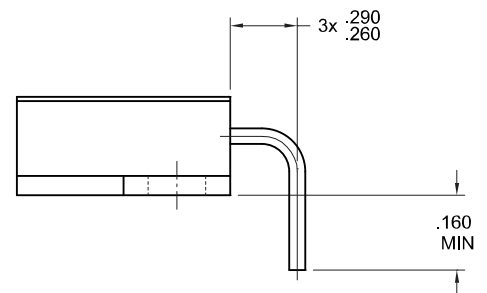
- 1 – Emitter
- 2 – Base
- 3 – Collector

Lead Options:

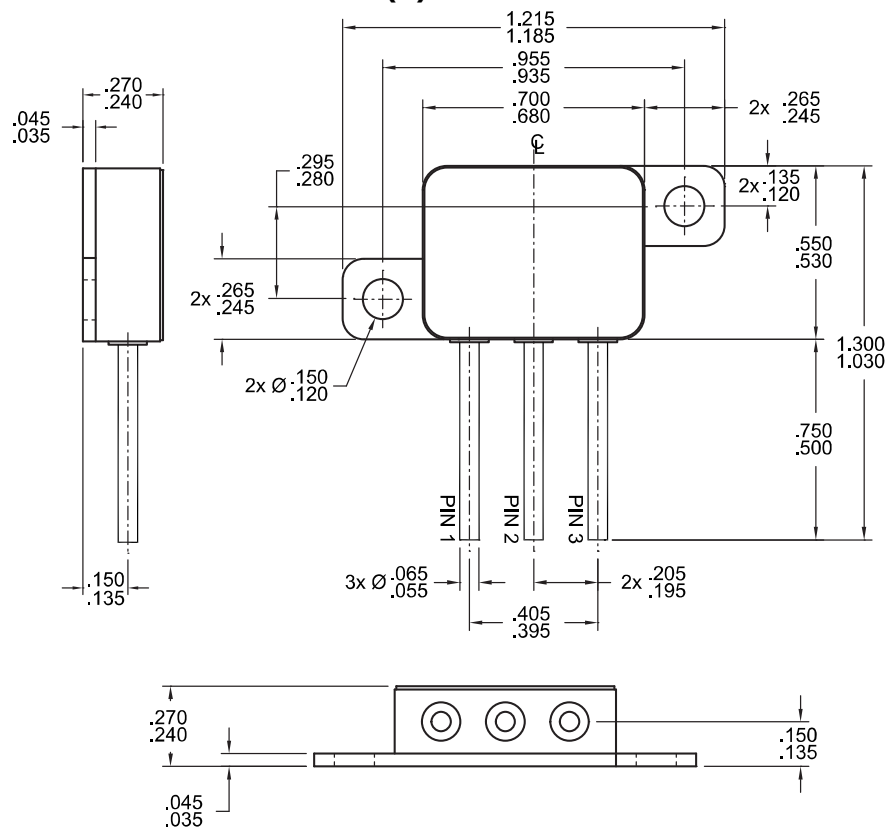
Up Bend (UB)



Down Bend (DB)



CASE OUTLINE: TO-259 (P)



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