



Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, CA 90638

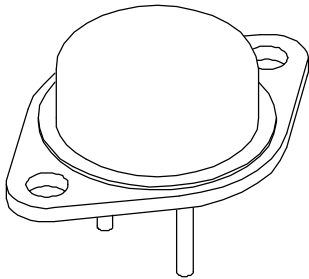
Phone: (562) 404-7855 * Fax: (562) 404-1773

ssdi@ssdi-power.com * www.ssdi-power.com

SFT6650/3

DESIGNER'S DATA SHEET

TO-3



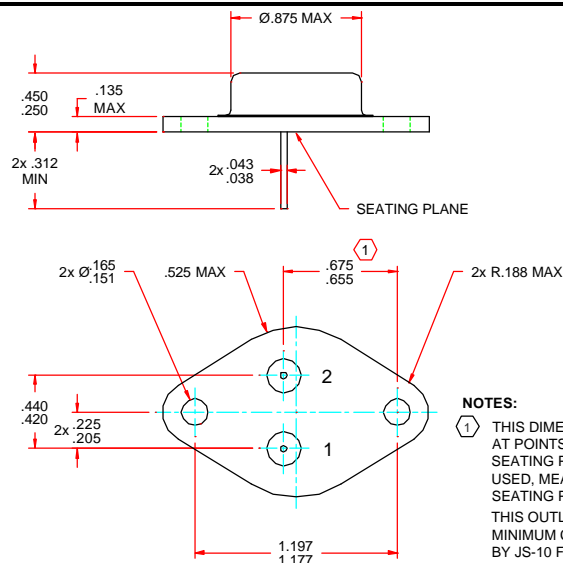
**10 AMP / 80 Volts
50 MHz
PNP POWER DARLINGTON
BIPOLAR TRANSISTOR**

Features:

- Low Saturation Voltage
- Hermetically Sealed, Isolated Package
- Direct Replacement for 2N6650
- TX, TXV, S-Level Screening Available, Equivalent to MIL-PRF-19500/527

Maximum Ratings		Symbol	Value	Units
Collector – Emitter Voltage		V_{CEO}	80	Volts
Collector – Base Voltage		V_{CBO}	80	Volts
Emitter – Base Voltage		V_{EBO}	5	Volts
Continuous Collector Current		I_C	10	Amps
Maximum Base Current		I_B	0.25	Amps
Power Dissipation	@ $T_A = 25^\circ\text{C}$	P_{D1}	5	W
	@ $T_C = 25^\circ\text{C}$	P_{D2}	85	
Operating & Storage Temperature		Top & Tstg	-65 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case		R_{qJC}	1.76	$^\circ\text{C/W}$

TO-3



NOTES:
 1 THIS DIMENSION SHALL BE MEASURED AT POINTS .050 - .055" BELOW THE SEATING PLANE. WHEN GAGE IS NOT USED, MEASUREMENT WILL BE MADE AT SEATING PLANE.
 THIS OUTLINE DOES NOT MEET THE MINIMUM CRITERIA ESTABLISHED BY JS-10 FOR REGISTRATION.

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

DATA SHEET #: TR0089A

DOC



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Electrical Characteristics ^{4/}		Symbol	Min	Typ	Max	Units
Collector to Emitter Sustaining Voltage	$I_C = 200\text{mA}$	BV_{CEO}	80	—	—	V
Collector – Emitter Breakdown Voltage	$I_C = 200\text{ mA}; R_{BB} = 100\ \Omega$	BV_{CER}	80	—	—	Volts
Collector Base Cutoff Current	$V_{CB} = 80\text{ V}$	I_{CBO}	—	—	1.0	mA
Collector Emitter Cutoff Current	$V_{CE} = 80\text{ V}$	I_{CEO}	—	0.001	1.0	mA
Collector Emitter Cutoff Current	$V_{CE} = 80\text{ V}, V_{BE} = 1.5\text{ V}$	I_{CEX}	—	—	0.3	mA
Emitter Base Cutoff Current	$V_{EB} = 5.0\text{ V}$	I_{EBO}	—	0.001	10	mA
DC Forward Current Transfer Ratio *	$V_{CE} = 3\text{V}, I_C = 1\text{ A}$ $V_{CE} = 3\text{V}, I_C = 5\text{ A}$ $V_{CE} = 3\text{V}, I_C = 10\text{ A}$	H_{FE1} H_{FE2} H_{FE3}	300 1000 100	7,000 9,000 1500	— 20,000 —	
Collector to Emitter Saturation Voltage	$I_C = 5\text{ A}, I_B = 10\text{ mA}$ $I_C = 10\text{ A}, I_B = 100\text{ mA}$	$V_{CE(sat)1}$ $V_{CE(sat)2}$	— —	1.4 2.2	2.0 3.0	V
Base to Emitter Voltage	$I_C = 5\text{ A}, V_{CE} = 3\text{V}$ $I_C = 10\text{ A}, V_{CE} = 3\text{V}$	$V_{BE(on)1}$ $V_{BE(on)2}$	— —	2.0 2.8	2.8 4.5	V
Frequency Transition (Small Signal Current Gain) @ $f = 1\text{ MHz}$	$V_{CE} = 5\text{V}, I_C = 1\text{ A}, f = 1\text{ MHz}$	h_{fe}	50	350	400	
Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	C_{obo}	—	100	300	pF
Switching characteristics	$V_{CC} = 30\text{V}, I_C = 5\text{ A},$ $I_{B1} = I_{B2} = 20\text{ mA}$	t_{on} t_{off}	— —	0.5 2.0	2.5 10	ms
Safe Operating Area $T_C = 25^\circ\text{C}, 1\text{ cycle}, 1\text{ sec}$	$V_{CE} = 8.5\text{V}, I_C = 10\text{ A}$ $V_{CE} = 25\text{V}, I_C = 3.4\text{ A}$ $V_{CE} = 80\text{V}, I_C = 0.14\text{ A}$	SOA1 SOA2 SOA3				

NOTES:

- * Pulse Test: Pulse Width = 300 μsec , Duty Cycle = 2%.
- 1/ For Ordering Information, Price, and Availability Contact Factory.
- 2/ Screening per MIL-PRF-19500.
- 3/ For Package Outlines Contact Factory.
- 4/ Unless Otherwise Specified, All Electrical Characteristics @ 25°C.

Available Part Numbers:

Consult Factory

PIN ASSIGNMENT

Package	Collector	Emitter	Base
TO-3	Case	Pin 2	Pin 1

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