



# 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

## SFT6036 series

### 4 AMP PNP Darlington Power Transistor 80 Volts

#### DESIGNER'S DATA SHEET

**Part Number / Ordering Information**<sup>1/</sup>

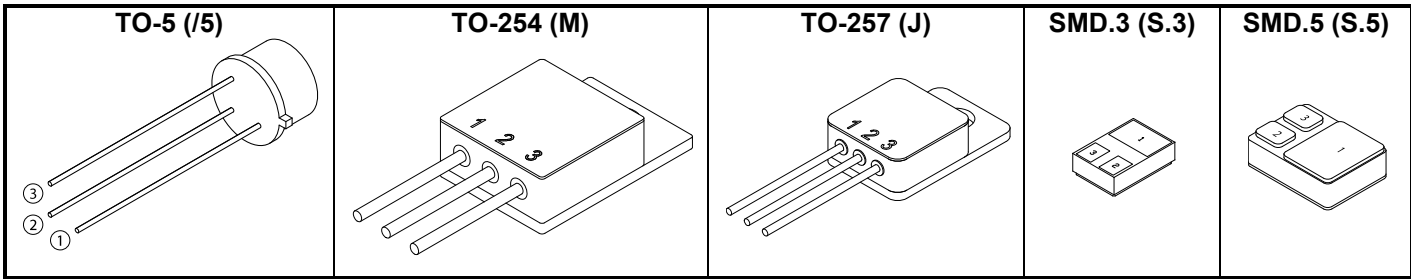
**SFT6036**

**Screening**<sup>2/</sup>  
 - = Not Screened  
 TX = TX Level  
 TXV = TXV Level  
 S = S Level

**Package**  
 /5 = TO-5  
 M = TO-254  
 J = TO-257  
 S.3 = SMD.3  
 S.5 = SMD.5

- Features:**
- BV<sub>CEO</sub> to 80 Volts
  - Low saturation voltage
  - Very low leakage
  - 200°C operating temperature
  - Gold eutectic die attach
  - Complement for SFT6039
  - Available with TO-5, TO-254, TO-257, SMD.3 and SMD.5 Cases
  - TX, TXV, and S Level Screening Available<sup>2/</sup>

Maximum Ratings	Symbol	Values	Units
Collector – Emitter Voltage	V <sub>CEO</sub>	80	Volts
Collector – Base Voltage	V <sub>CBO</sub>	80	Volts
Emitter – Base Voltage	V <sub>EBO</sub>	5	Volts
Collector Current	I <sub>C cont</sub> I <sub>C pk</sub>	4 8	Amps
Base Current	I <sub>B</sub>	0.1	Amps
Total Power Dissipation @ T <sub>c</sub> = 100°C	P <sub>D</sub>	- 20 20 28.5 31	Watts
Operating & Storage Temperature	T <sub>J</sub> & T <sub>STG</sub>	-65 to 200	°C
Thermal Resistance (Junction to Case)	R <sub>θJA</sub> R <sub>θJC</sub> R <sub>θJC</sub> R <sub>θJC</sub> R <sub>θJC</sub>	175 5 5 3.5 3.2	°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.



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Electrical Characteristics <sup>3/</sup>	Symbol	Min	Typ	Max	Units
<b>Collector – Emitter Breakdown Voltage*</b> $I_C = 100 \text{ mA}$	<b><math>BV_{CEO}</math></b>	80	95	-	Volts
<b>Collector – Emitter Cutoff Current,</b> $V_{CE} = 80V, I_B = 0$	<b><math>I_{CEO}</math></b>	-	0.05	100	$\mu\text{A}$
<b>Collector – Emitter Cutoff Current</b> $V_{CE} = 80V, V_{BE(off)} = 1.5V$ $V_{CE} = 80V, V_{BE(off)} = 1.5V, T_C = 125^\circ\text{C}$	<b><math>I_{CEX}</math></b>	-	0.05 12.5	100 500	$\mu\text{A}$
<b>Collector Cutoff Current</b> $V_{CB} = 80V$	<b><math>I_{CBO}</math></b>	-	0.05	500	$\mu\text{A}$
<b>Emitter Cutoff Current</b> $(V_{BE} = 5V)$	<b><math>I_{EBO}</math></b>		0.65	2	mA
<b>DC Current Gain*</b> $(I_C = 0.5A, V_{CE} = 3V)$ $(I_C = 2A, V_{CE} = 3V)$ $(I_C = 4A, V_{CE} = 3V)$	<b><math>H_{FE}</math></b>	500 750 100	4,000 3,800 900	- 15,000 -	
<b>Collector-Emitter Saturation Voltage*</b> $I_C = 2A, I_B = 8mA$ $I_C = 4A, I_B = 40mA$	<b><math>V_{CE(SAT)1}</math></b> <b><math>V_{CE(SAT)2}</math></b>	-	1.1 1.6	2 3	V
<b>Base-Emitter Saturation Voltage*</b> $I_C = 4A, I_B = 40mA$	<b><math>V_{BE(SAT)2}</math></b>	-	2.25	4	V
<b>Base-Emitter Voltage</b> $I_C = 2A, V_{CE} = 3V$	<b><math>V_{BE(ON)}</math></b>	-	1.65	2.8	V
<b>Small Signal Current Gain</b> $I_C = 0.75A, V_{CE} = 10V, f = 1\text{MHz}$	<b><math>h_{fe}</math></b>	25	1400	-	
<b>Output Capacitance</b> $V_{CB} = 15V, I_E = 0A, f = 2.0\text{MHz}$	<b><math>C_{ob}</math></b>	-	40	200	pF

Electrical Characteristics <sup>3/</sup>	Symbol	Typical	Units
<b>Delay Time</b> $V_{CC} = -30V$	<b><math>t_d</math></b>	45	ns
<b>Rise Time</b> $I_C = 4A$	<b><math>t_r</math></b>	200	ns
<b>Storage Time</b> $I_{B1} = I_{B2} = 16mA$	<b><math>t_s</math></b>	600	ns
<b>Fall Time</b>	<b><math>t_f</math></b>	450	ns

**Notes:** \* Pulse Test: Pulse Width = 300  $\mu\text{s}$ . Duty Cycle = 2%.  
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PIN ASSIGNMENT (Standard)			
Package	Collector	Emitter	Base
TO-5 (I5)	3	1	2
TO-254(M)	1	2	3
TO-257(J)	1	2	3
SMD.3 (S.3)	1	2	3
SMD.5 (S.5)	1	2	3



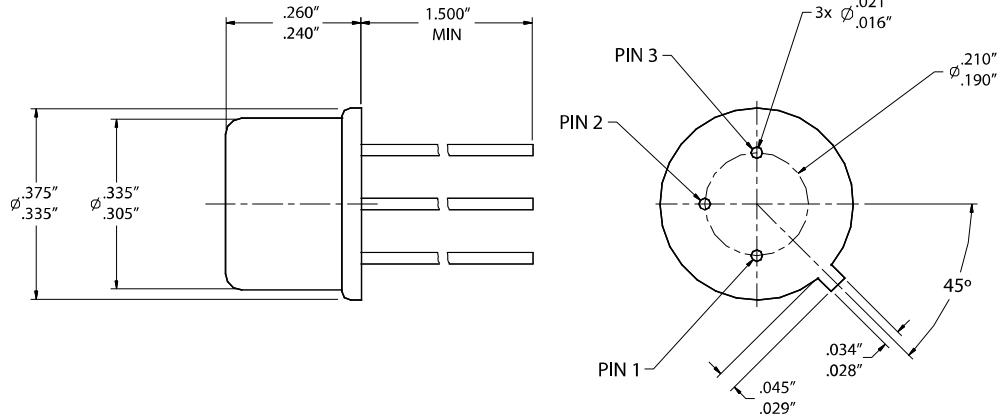
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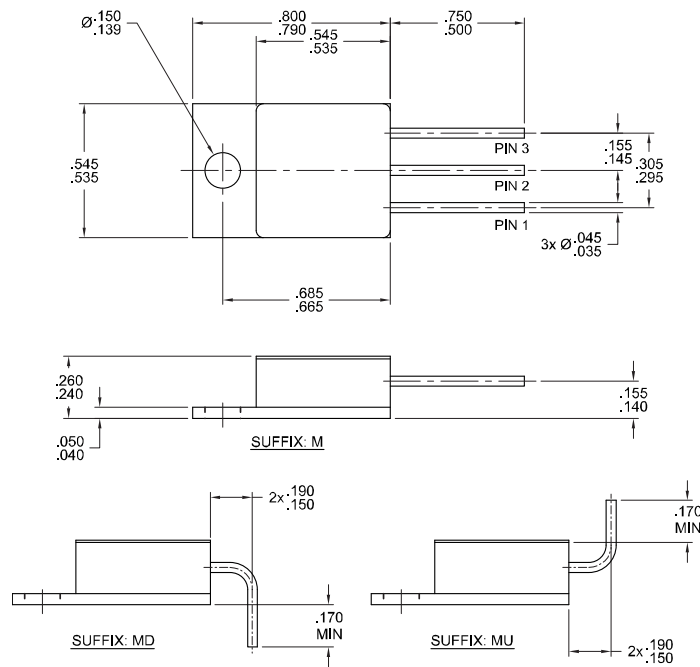
# SFT6036

## CASE OUTLINES

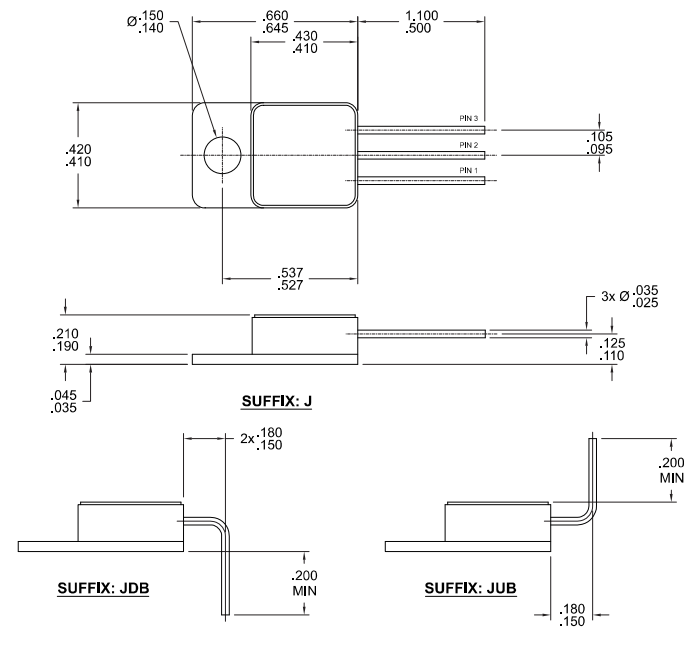
### TO-5 (I5):



### TO-254 (M):



### TO-257 (J):



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

**DATA SHEET #: TR0120A**

**DOC**

