



PRELIMINARY

Solid State Devices, Inc.

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SFT4374

1.5 AMP PNP Transistor 60 Volts

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT4374

Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Package S.22 = SMD.22

Features:

- Radiation tolerant
- Fast switching
- High frequency
- Low saturation voltage
- 200°C operating temperature
- Gold eutectic die attach
- TX, TXV, and S Level Screening Available ^{2/}

Maximum Ratings ^{3/}	Symbol	Values	Units
Collector – Emitter Voltage	V_{CEO}	80	Volts
Collector – Base Voltage	V_{CBO}	120	Volts
Emitter – Base Voltage	V_{EBO}	6.5	Volts
Collector Current	I_C	1.5 2.4	Amps
		Continuous Pulsed (2% Duty Cycle)	
Base Current	I_B	0.6	Amps
Total Device Dissipation $T_C = 100^\circ\text{C}$ Derate above $T_C = 100^\circ\text{C}$	P_D	6.6 66	Watts mW/ $^\circ\text{C}$
Operating & Storage Temperature	T_J & T_{STG}	-65 to +200	$^\circ\text{C}$
Thermal Resistance	$R_{\theta JC}$	5.5	$^\circ\text{C}/\text{W}$

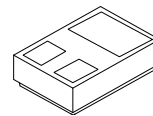
NOTES:

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

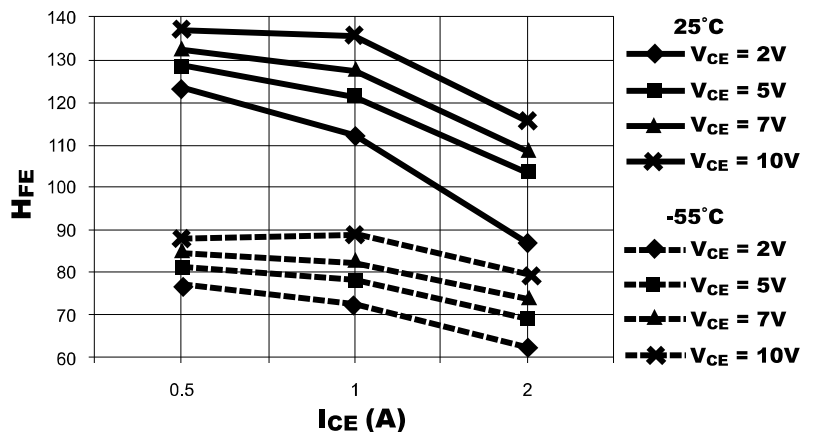
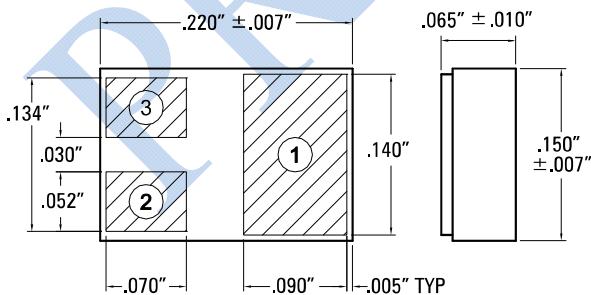
^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

^{3/} Unless otherwise specified, maximum ratings/electrical characteristics at 25°C.

SMD.22 (S.22)



CASE OUTLINE: SMD.22



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

DATA SHEET #: TR0123A

DOC



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Electrical Characteristics ^{3/}	Symbol	Min	Max	Units		
Collector – Emitter Breakdown Voltage $I_C = 10\text{mA}$	BV_{CEO}	80	110	-	Volts	
Collector – Base Breakdown Voltage $I_C = 100\mu\text{A}$	BV_{CBO}	120	150	-	Volts	
Emitter – Base Breakdown Voltage $I_E = 200\mu\text{A}$	BV_{EBO}	6.5	7.3	-	Volts	
Collector – Base Cutoff Current $V_{CB} = 60\text{V}, T_C = 25^\circ\text{C}$ $V_{CB} = 60\text{V}, T_C = 125^\circ\text{C}$	I_{CBO}	-	0.001 0.15	0.1 1	μA	
Collector – Emitter Cutoff Current $V_{CE} = 30\text{V}, T_C = 25^\circ\text{C}$ $V_{CE} = 30\text{V}, T_C = 125^\circ\text{C}$	I_{CEO}	-	0.005 20	0.1 50	μA	
Emitter Cutoff Current $V_{BE} = 5\text{V}$	I_{EBO}	-	0.002	1	μA	
DC Current Gain* $I_C = 0.5\text{A}, V_{CE} = 2\text{V}$ $I_C = 1.0\text{A}, V_{CE} = 2\text{V}$ $I_C = 2.0\text{A}, V_{CE} = 2\text{V}$ $I_C = 0.5\text{A}, V_{CE} = 5\text{V}$ $I_C = 1.0\text{A}, V_{CE} = 5\text{V}$ $I_C = 2.0\text{A}, V_{CE} = 5\text{V}$ $I_C = 0.5\text{A}, V_{CE} = 10\text{V}$ $I_C = 1.0\text{A}, V_{CE} = 10\text{V}$ $I_C = 2.0\text{A}, V_{CE} = 10\text{V}$	H_{FE}	80 70 50 - - - 90 90 75	123 112.5 87 128.5 121.5 103.5 137 136 115	-		
DC Current Gain* $I_C = 0.5\text{A}, V_{CE} = 2\text{V}, T_C = -55^\circ\text{C}$ $I_C = 1.0\text{A}, V_{CE} = 2\text{V}, T_C = -55^\circ\text{C}$ $I_C = 2.0\text{A}, V_{CE} = 2\text{V}, T_C = -55^\circ\text{C}$ $I_C = 0.5\text{A}, V_{CE} = 5\text{V}, T_C = -55^\circ\text{C}$ $I_C = 1.0\text{A}, V_{CE} = 5\text{V}, T_C = -55^\circ\text{C}$ $I_C = 2.0\text{A}, V_{CE} = 5\text{V}, T_C = -55^\circ\text{C}$ $I_C = 0.5\text{A}, V_{CE} = 10\text{V}, T_C = -55^\circ\text{C}$ $I_C = 1.0\text{A}, V_{CE} = 10\text{V}, T_C = -55^\circ\text{C}$ $I_C = 2.0\text{A}, V_{CE} = 10\text{V}, T_C = -55^\circ\text{C}$	H_{FE}	55 50 40 - - - 65 65 55	77 72 62 81 78 69 88 88 79			
Collector-Emitter Saturation Voltage* $I_C = 1\text{A}, I_B = 100\text{mA}$ $I_C = 2.4\text{A}, I_B = 0.48\text{A}$	$V_{CE(SAT)}$	-	0.14 0.28	0.25 1	V	
Base-Emitter Saturation Voltage $I_C = 1.0\text{A}, I_B = 0.10\text{A}$	$V_{BE(SAT)}$	-	0.84	1.2	V	
Current Gain Bandwidth Product $I_C = 1.0\text{A}, V_{CE} = 5\text{V}, f = 10\text{MHz}$	fT	120	150	-	MHz	
Output Capacitance $V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1.0\text{MHz}$	C_{ob}	-	52	60	pF	
Input Capacitance $V_{BE} = -0.5\text{V}, I_C = 0\text{A}, f = 1.0\text{MHz}$	C_{ib}	-	430	500	pF	
Turn On Time ($t_d + t_r$)	$V_{CC} = 20\text{V}, I_C = 1.0\text{A}, V_{BE(off)} = 3.7\text{V}$ $I_{B1} = I_{B2} = 100\text{mA}$	$t_{(on)}$	-	60	120	nsec
Turn Off Time ($t_s + t_f$)		$t_{(off)}$	-	350	500	nsec

Notes: * Pulse Test: Pulse Width = 300 μs . Duty Cycle = 2%. 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.	PIN ASSIGNMENT (Standard)			
	Package	Collector	Emitter	Base
	SMD.22 (S.22)	1	2	3