

X00135

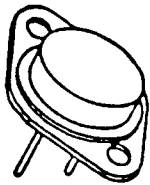
**SFT1010 SFT1012 SFT1014**  
**100 AMP**  
**HIGH ENERGY NPN TRANSISTORS**  
**V<sub>CEO</sub> 100, 120, 140 VOLTS**



14830 Valley View Avenue  
 La Mirada, California 90638  
 (213) 921-9660  
 TWX 910-583-4807  
 FAX 213-921-2396

**CASE STYLE R**

**TO-3 WITH .060 PINS**



**FEATURES**

- BVCBO 250 VOLTS MIN
- 300 WATTS POWER DISSIPATION
- EXCELLENT SOA CURVE
- Es/b OF 400mJ
- GAIN OF OVER 5 AT 100 AMPS
- HIGH REL CONSTRUCTION INCLUDING GOLD EUTECTIC DIE MOUNTING, ALUMINUM WIRING
- PLANAR CHIP CONSTRUCTION WITH LOW LEAKAGE AND VERY FAST SWITCHING

**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector - Emitter Voltage SFT1010 SFT1012 SFT1014	V <sub>CEO</sub>	100 120 140	Volts
Collector - Base Voltage	V <sub>CBO</sub>	250	Volts
Emitter - Base Voltage	V <sub>EBO</sub>	8	Volts
Collector Current	I <sub>C</sub>	100	Amps
Base Current	I <sub>B</sub>	35	Amps
Total Device Dissipation @ TC = 50 °C Derate above 50 °C	P <sub>D</sub>	300 2	Watts W/°C
Operating and Storage Temperature	T <sub>j</sub> , T <sub>stg</sub>	-65 to 200	°C

**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.5	°C/W

**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I <sub>C</sub> = 200 mA dc) SFT1010 SFT1012 SFT1014	BV <sub>CEO</sub>	100 120 140		Vdc
Collector - Base Breakdown Voltage (I <sub>C</sub> = 100 μA dc)	BV <sub>CBO</sub>	250		Vdc
Emitter - Base Breakdown Voltage (I <sub>E</sub> = 100 μA dc)	BV <sub>EBO</sub>	8		Vdc

NOTE: All specifications subject to change without notice.

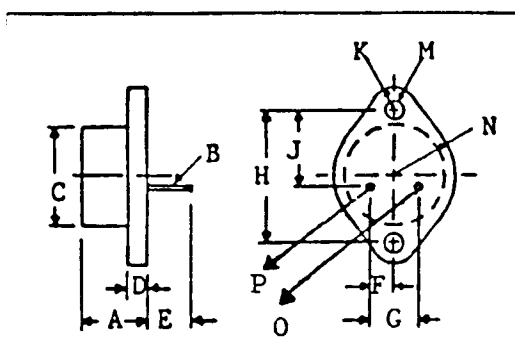
# ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current ( $V_{CB} = 250 \text{ Vdc}$ )	$I_{CBO}$		10	$\mu\text{A dc}$
Emitter Cutoff Current ( $V_{EB} = 7 \text{ Vdc}$ )	$I_{EBO}$		10	$\mu\text{A dc}$
DC Current Gain* ( $I_C = 10 \text{ A dc}, V_{CE} = 2 \text{ Vdc}$ ) ( $I_C = 50 \text{ A dc}, V_{CE} = 5 \text{ Vdc}$ ) ( $I_C = 100 \text{ A dc}, V_{CE} = 5 \text{ Vdc}$ )	$h_{FE}$	40 30 7		
Collector - Emitter Saturation Voltage* ( $I_C = 50 \text{ A dc}, I_B = 5 \text{ A dc}$ ) ( $I_C = 100 \text{ A dc}, I_B = 10 \text{ A dc}$ )	$V_{CE(SAT)}$		2 4	Vdc
Base - Emitter Saturation Voltage* ( $I_C = 100 \text{ A dc}, I_B = 10 \text{ A dc}$ )	$V_{BE(SAT)}$		2.5	Vdc
Current - Gain - Bandwidth Product ( $I_C = 1 \text{ A dc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ MHz}$ )	$f_T$	35		MHz
Output Capacitance ( $V_{CB} = 10 \text{ Vdc}, I_E = 0.1 \text{ A dc}, f = 1 \text{ MHz}$ )	$C_{ob}$		600	pf
RBSOA ( $I_B = 1 \text{ A dc}, R_{B1} = R_{B2} = 20 \text{ ohms},$ $V_{BE(off)} = 2.0 \text{ Vdc}, L = 1.0 \text{ mH}$ )	$E_{s/b}$	400		mJ
FBSOA ( $V_{CE} = 20 \text{ Vdc}, I_C = 15 \text{ A dc}$ ) ( $V_{CE} = 100 \text{ Vdc}, I_C = 0.4 \text{ A dc}$ )	$I_{s/b}$	1 1		sec
ON TIME ( $V_{CC} = 60 \text{ Vdc}, I_C = 10 \text{ A dc},$ $I_{B1} = I_{B2} = 1.0 \text{ A dc}$ )	$t_{on}$		800	ns
Storage Time	$t_s$		1500	ns
Fall Time	$t_f$		400	ns

Pulse Test: Pulse width = 300  $\mu\text{s}$ , Duty Cycle = 2%

## PHYSICAL DIMENSIONS

### KEY TO DIMENSIONS:



- (Inches)
- A = .250 - .450
  - B = .057 - .062
  - C = .875 MAX.
  - D = .135 MAX.
  - E = .312 MIN.
  - F = .205 - .225
  - G = .420 - .440
  - H = 1.177 - 1.197
  - J = .655 - .675
  - K = .188 MAX.
  - M = .151 - .161
  - N = .525 MAX.
  - O = BASE
  - P = EMITTER

# SSDI

SOLID STATE DEVICES, INC.