

PRELIMINARY DATA SHEET

X00135

SFT1010 SFT1012 SFT1014

100 AMP

HIGH ENERGY NPN TRANSISTORS

V_{CE0} 100, 120, 140 VOLTS



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CASE STYLE R

TO-3 WITH .060 PINS



FEATURES

- BVCBO 250 VOLTS MIN
- 300 WATTS POWER DISSIPATION
- EXCELLENT SOA CURVE
- E_s/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_{CE0}	100 120 140	Volts
Collector - Base Voltage	V_{CBO}	250	Volts
Emitter - Base Voltage	V_{EB0}	8	Volts
Collector Current	I_C	100	Amps
Base Current	I_B	35	Amps
Total Device Dissipation @ $T_C = 50^\circ C$ Derate above $50^\circ C$	P_D	300 2	Watts W/ $^\circ C$
Operating and Storage Temperature	T_j, T_{stg}	-65 to 200	$^\circ C$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.5	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* $I_C = 200 \text{ mAdc}$ SFT1010 SFT1012 SFT1014	BV_{CE0}	100 120 140		Vdc
Collector - Base Breakdown Voltage $I_C = 100 \text{ uAdc}$	BV_{CBO}	250		Vdc
Emitter - Base Breakdown Voltage $I_E = 100 \text{ uAdc}$	BV_{EB0}	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	μAdc
Emitter Cutoff Current ($V_{EB} = 7 \text{ Vdc}$)	I_{EBO}		10	μAdc
DC Current Gain* ($I_C = 10 \text{ Adc}$, $V_{CE} = 2 \text{ Vdc}$) ($I_C = 50 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$) ($I_C = 100 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)	h_{FE}	40 30 7		
Collector - Emitter Saturation Voltage* ($I_C = 50 \text{ Adc}$, $I_B = 5 \text{ Adc}$) ($I_C = 100 \text{ Adc}$, $I_B = 10 \text{ Adc}$)	$V_{CE(sat)}$		2 4	Vdc
Base - Emitter Saturation Voltage* ($I_C = 100 \text{ Adc}$, $I_B = 10 \text{ Adc}$)	$V_{BE(sat)}$		2.5	Vdc
Current - Gain - Bandwidth Product ($I_C = 1 \text{ Adc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 10 \text{ MHz}$)	f_T	35		MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1 \text{ MHz}$)	C_{ob}		600	pf
RBSOA ($I_B = 1 \text{ Adc}$, $R_{B1} = R_{B2} = 20 \text{ ohms}$, $V_{BE(off)} = 2.0 \text{ Vdc}$, $L = 1.0 \text{ mH}$)	$E_{s/b}$	400		mJ
FBSOA ($V_{CE} = 20 \text{ Vdc}$, $I_C = 15 \text{ Adc}$) ($V_{CE} = 100 \text{ Vdc}$, $I_C = 0.4 \text{ Adc}$)	$I_{s/b}$	1 1		sec
ON TIME ($V_{CC} = 60 \text{ Vdc}$, $I_C = 10 \text{ Adc}$, $I_{B1} = I_{B2} = 1.0 \text{ Adc}$)	t_{on}		800	ns
Storage Time	t_s		1500	ns
Fall Time	t_f		400	ns

Pulse Test: Pulse width = 300 μs , DutyCycle = 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

