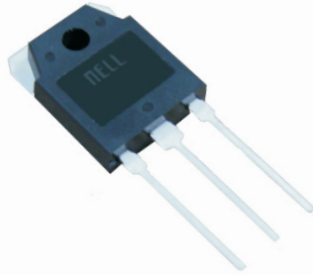


Silicon NPN Epitaxial Planar Transistor (Complement to type 2SA1386B) 15A/160V, 180V/130W



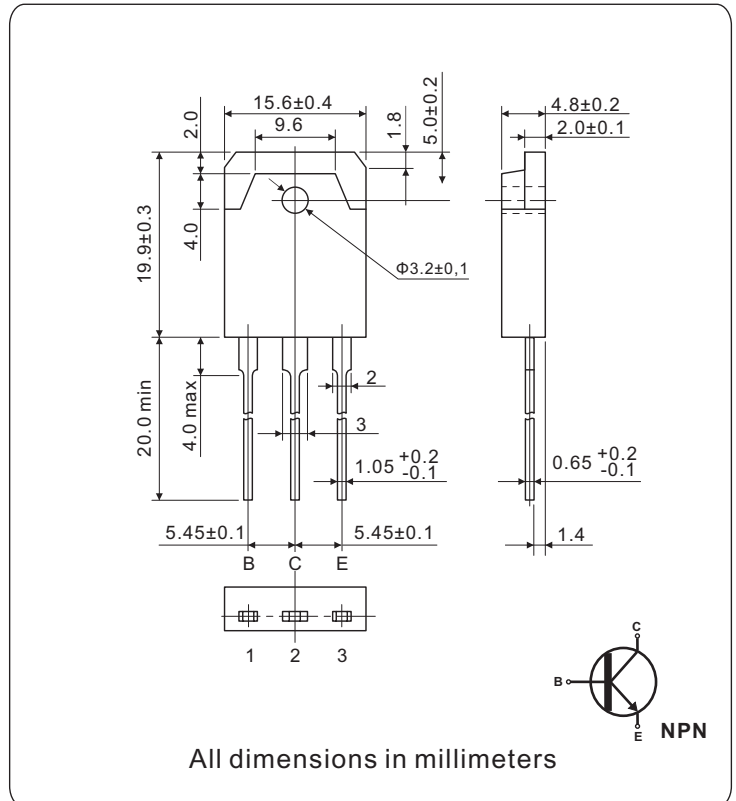
TO-3P(B)

FEATURES

- Recommend for 105W high Fidelity audio frequency amplifier output stage
- Complement to type 2SA1386B & 2SA1386B-A

APPLICATIONS

- Audio and general purpose



ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE		UNIT
		2SC3519B	2SC3519B-A	
V_{CBO}	Collector to base voltage	160	180	V
V_{CEO}	Collector to emitter voltage	160	180	
V_{EBO}	Emitter to base voltage	5		
$I_{CP} (I_{CM})$	Peak collector current	20		A
I_C	Collector current	15		
I_B	Base current	4		
P_C	Collector power dissipation	$T_C = 25^\circ\text{C}$	130	W
	Derate above 25°C		1.04	W/°C
T_j	Junction temperature	150		°C
T_{stg}	Storage temperature	-55 to 150		

THERMAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise specified)

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-c)}$	Maximum thermal resistance, junction to case	0.96	°C/W

ELECTRICAL CHARACTERISTICS (T _a = 25°C)							
SYMBOL	PARAMETER	CONDITIONS		min	typ	max	UNIT
V _{(BR)CEO}	Collector to emitter breakdown voltage	I _C = 25mA, I _B = 0	2SC3519B	160			V
			2SC3519B-A	180			
I _{CBO}	Collector cutoff current	V _{CB} = 160V, I _E = 0	2SC3519B			100	μA
		V _{CB} = 180V, I _E = 0	2SC3519B-A			100	
I _{EBO}	Emitter cutoff current	V _{EB} = 5V, I _C = 0				100	
h _{FE}	Forward current transfer ratio(DC Current gain)	V _{CE} = 4V, I _C = 5A		50			
V _{CE(sat)}	Collector to emitter saturation voltage	I _C = 5A, I _B = 0.5A				2.0	V
f _T	Transition frequency (Current gain - Bandwidth product)	V _{CE} = 12V, I _C = 2A, f = 1MHz		10	50		MHz
t _{on}	Turn-on time	I _C = 10A, I _{B1} = 1.0A, I _{B2} = -1.0A			0.20		μs
t _{stg}	Storage time	V _{CC} = 40V, R _L = 4Ω, V _{BB1} = 10V, V _{BB2} = -5V			1.30		
t _f	Fall time				0.45		
C _{OB}	Output capacitance	V _{CB} = 10V, I _E = 0, f _{test} = 1MHz			250		pF

*Pulse test: Pulse width = 300μs, duty cycle ≤ 2.0%

Fig.1 I_C-V_{CE} Characteristics (Typical)

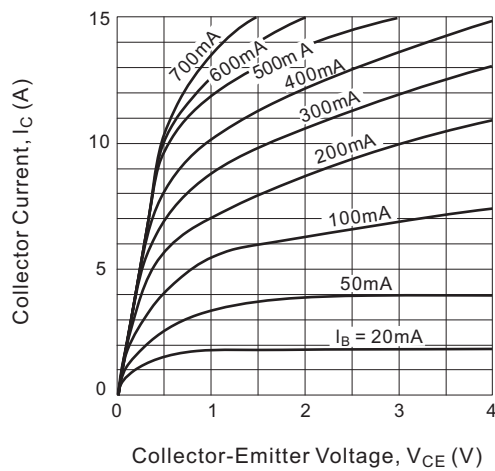


Fig.2 V_{CE(sat)} - I_B Characteristics (Typical)

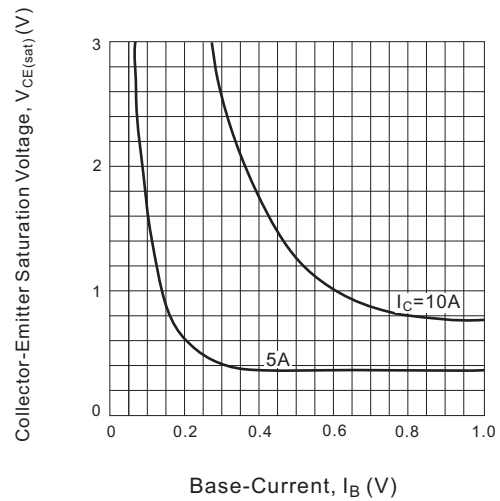


Fig.3 I_C-V_{BE} Temperature Characteristics (Typical)

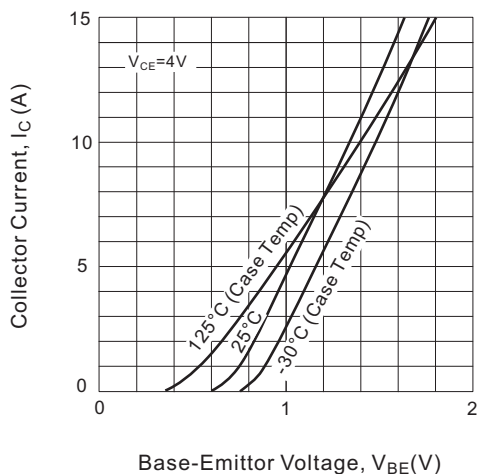


Fig.4 h_{FE}-I_C Characteristics (Typical)

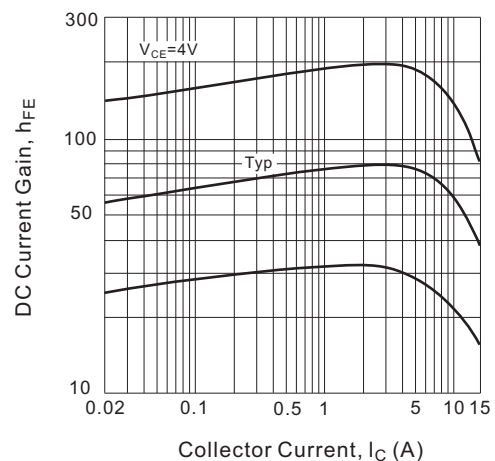


Fig.5 h_{FE} - I_C Temperature Characteristics (Typical)

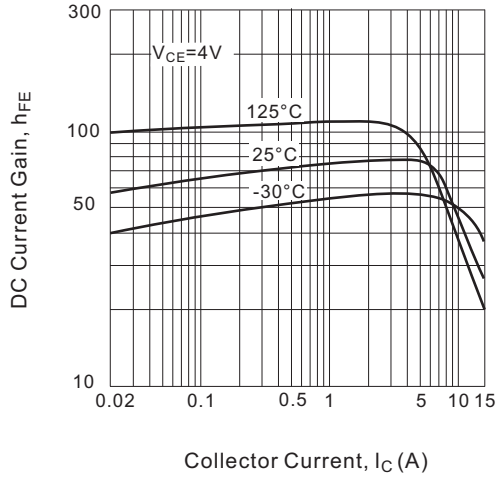


Fig.6 $R_{th(j-a)}$ -t Characteristics

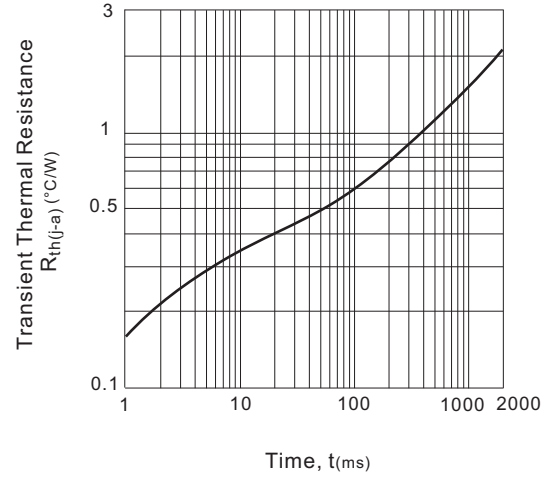


Fig.7 f_T - I_E Characteristics (Typical)

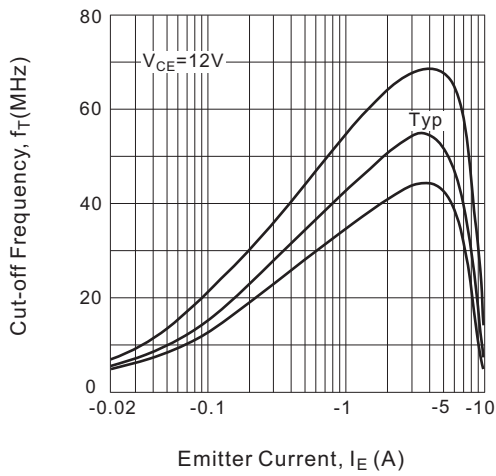


Fig.8 Safe Operating Area (Single Pulse)

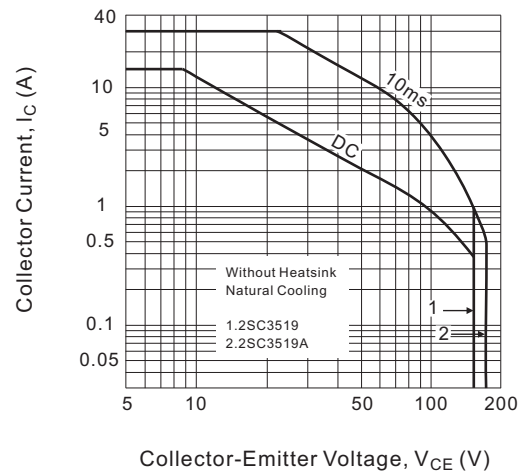


Fig.9 P_C - T_a Derating

