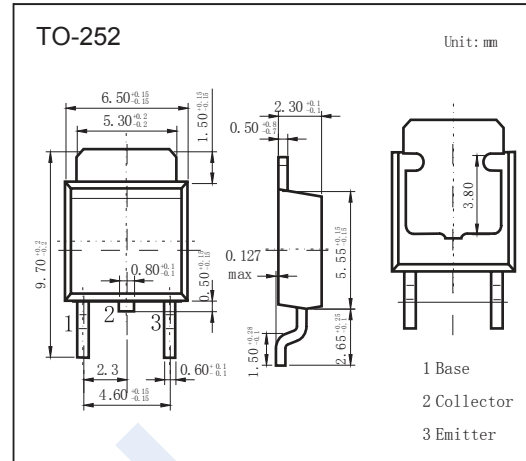


PNP Transistors

2SA1385-Z

■ Features

- Low $V_{CE(sat)}$: $V_{CE(sat)} = -0.18$ V TYP.
- Complement to 2SC3518-Z

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-60	V
Emitter-base voltage	V_{EBO}	-7	V
Collector current	I_C	-5	A
Collector current pulse *	I_{CP}	-7	A
Total power dissipation	P_T	10	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, duty cycle $\leq 50\%$.

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = -100 \mu\text{A}$, $I_E = 0$	-60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 \text{mA}$, $I_B = 0$	-60			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu\text{A}$, $I_C = 0$	-7			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -50 \text{V}$, $I_E = 0$			-10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -7\text{V}$, $I_C = 0$			-10	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -2\text{A}$, $I_B = -0.2\text{A}$		-0.18	-0.3	V
Base - emitter saturation voltage *	$V_{BE(sat)}$	$I_C = -2\text{A}$, $I_B = -0.2\text{A}$			-1.2	
DC current gain *	h_{FE}	$V_{CE} = -1\text{V}$, $I_C = -2\text{A}$	100	200	400	
		$V_{CE} = -1\text{V}$, $I_C = -5\text{A}$	50	100		
Turn-on time	t_{on}	$I_C = -2\text{A}$, $I_{B1} = -I_{B2} = -0.2\text{A}$, $R_L = 50\Omega$, $V_{CC} = -10\text{V}$		0.08	1	μs
Storage time	t_s			0.55	2.5	
Fall time	t_f			0.18	1	
Transition frequency	f_T	$V_{CE} = -10\text{V}$, $I_C = -0.5\text{A}$		140		MHz

* $PW \leq 350\mu\text{s}$, duty cycle $\leq 2\%$.

■ Classification of h_{FE}

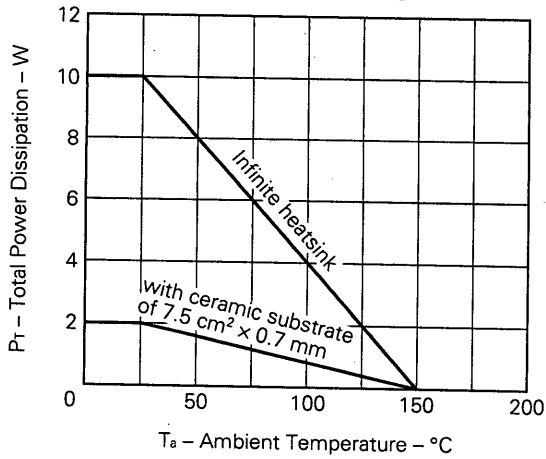
Marking	M	L	K
h_{FE}	100~200	160~320	200~400

PNP Transistors

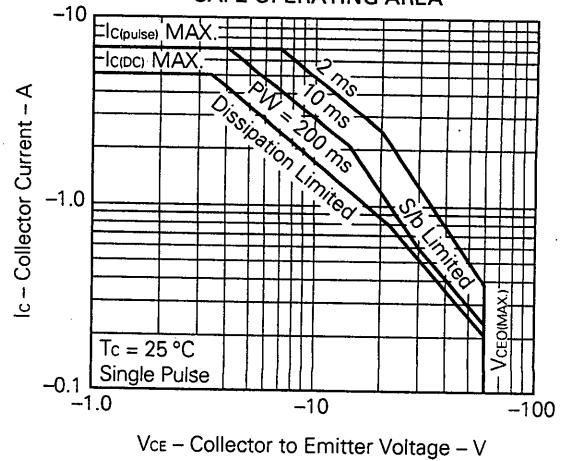
2SA1385-Z

■ Typical Characteristics

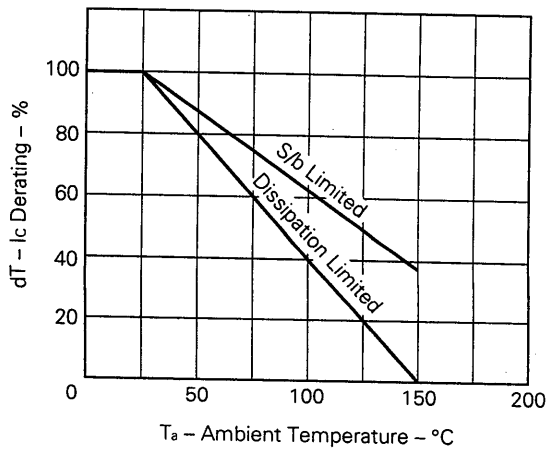
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



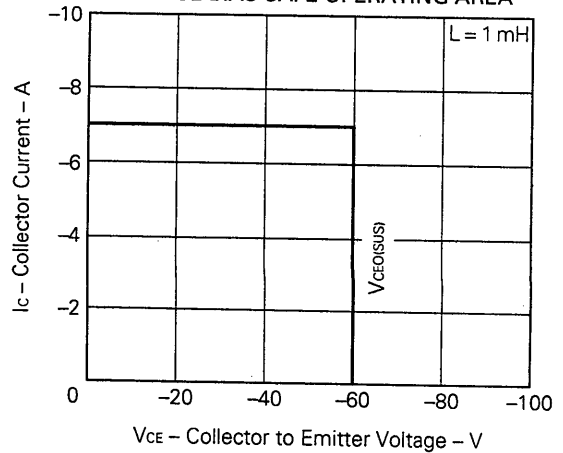
SAFE OPERATING AREA



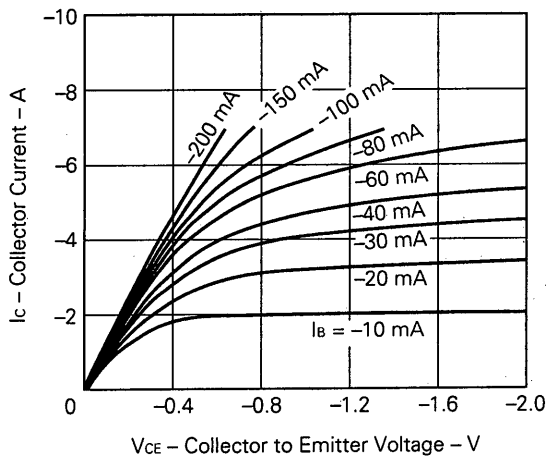
DERATING CURVE OF SAFE OPERATING AREA



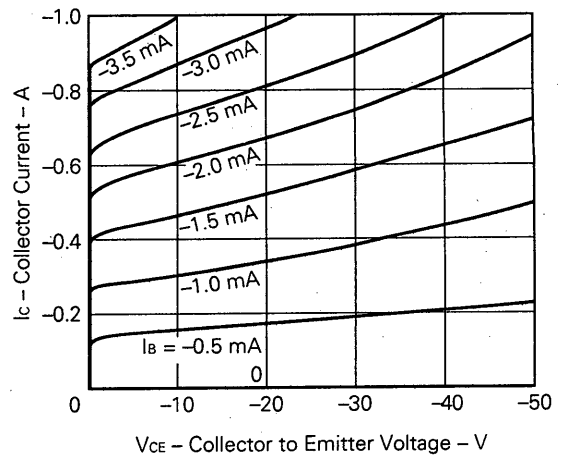
REVERSE BIAS SAFE OPERATING AREA



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

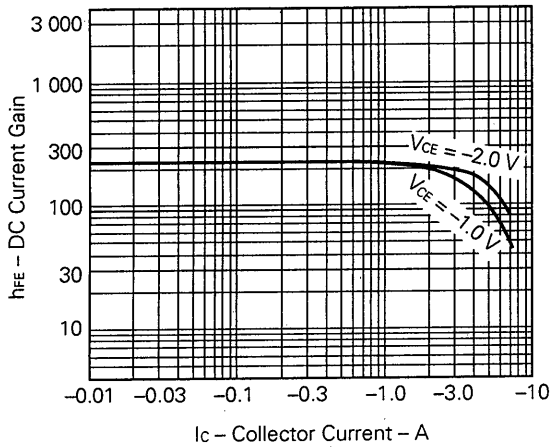


PNP Transistors

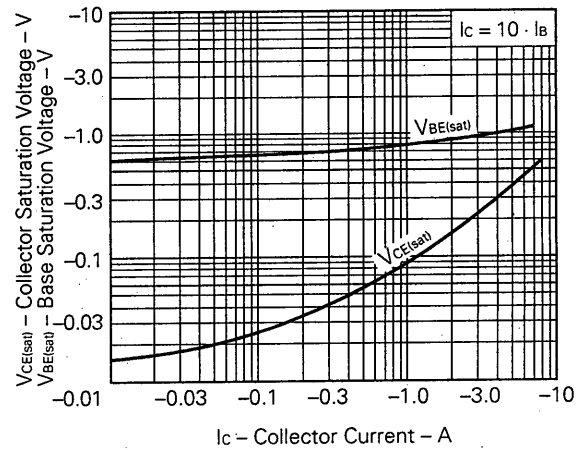
2SA1385-Z

■ Typical Characteristics

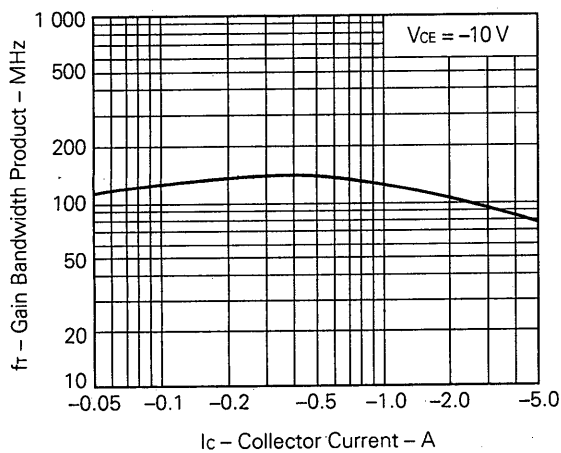
DC CURRENT GAIN vs. COLLECTOR CURRENT



COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



SWITCHING TIME vs. COLLECTOR CURRENT

