

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- High current surface mount PNP silicon switching transistor for Load management in portable applications

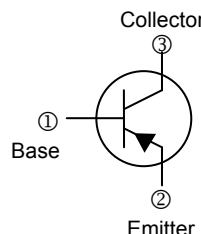
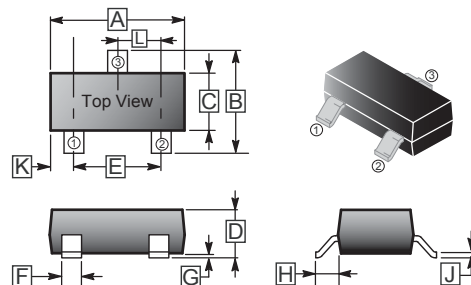
MARKING

589

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7' inch

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6	REF.
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector - Base Voltage	V_{CBO}	-50	V
Collector - Emitter Voltage	V_{CEO}	-30	V
Emitter - Base Voltage	V_{EBO}	-5	V
Collector Current - Continuous	I_C	-1	A
Collector Power Dissipation	P_C	310	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	403	$^\circ\text{C} / \text{W}$
Junction, Storage Temperature	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-50	-	-	V	$I_C = -100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-30	-	-	V	$I_C = -10\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-	-	V	$I_E = -100\mu\text{A}, I_C = 0$
Collector Cut-Off Current	I_{CBO}	-	-	-0.1	μA	$V_{CB} = -30\text{V}, I_E = 0$
Collector-emitter cut-off current	I_{CES}	-	-	-0.1	μA	$V_{CES} = -30\text{V}$
Emitter Cut-Off Current	I_{EBO}	-	-	-0.1	μA	$V_{EB} = -4\text{V}, I_C = 0$
DC Current Gain	h_{FE}	100	-	-		$V_{CE} = -2\text{V}, I_C = -1\text{mA}$
		100	-	300		$V_{CE} = -2\text{V}, I_C = -500\text{mA}$
		80	-	-		$V_{CE} = -2\text{V}, I_C = -1\text{A}$
		40	-	-		$V_{CE} = -2\text{V}, I_C = -2\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	-0.25	V	$I_C = -500\text{mA}, I_B = -50\text{mA}$
		-	-	-0.3		$I_C = -1\text{A}, I_B = -100\text{mA}$
		-	-	-0.65		$I_C = -2\text{A}, I_B = -200\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	-1.2	V	$I_C = -1\text{A}, I_B = -100\text{mA}$
Transition frequency	f_T	100	-	-	MHz	$V_{CE} = -5\text{V}, I_C = -100\text{mA}, f = 100\text{MHz}$
Collector Output Capacitance	C_{ob}	-	-	15	pF	$f = 1\text{MHz}$

CHARACTERISTIC CURVES

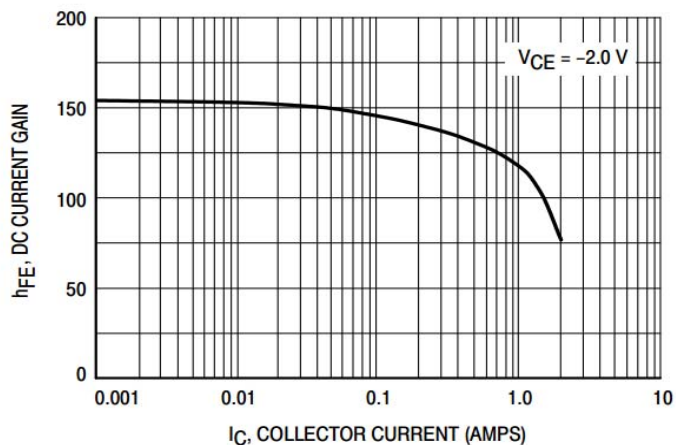


Figure 1. DC Current Gain versus Collector Current

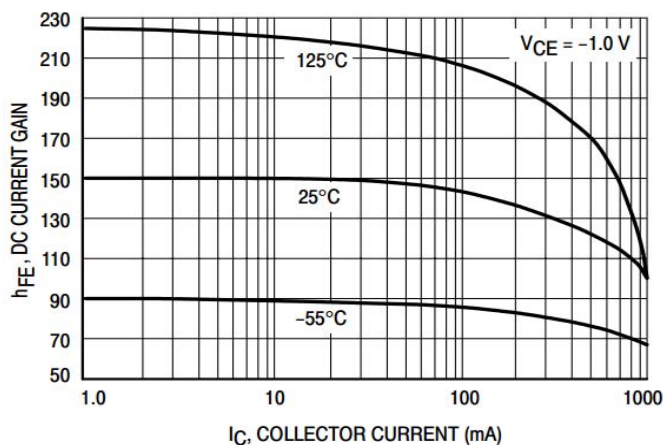


Figure 2. DC Current Gain versus Collector Current

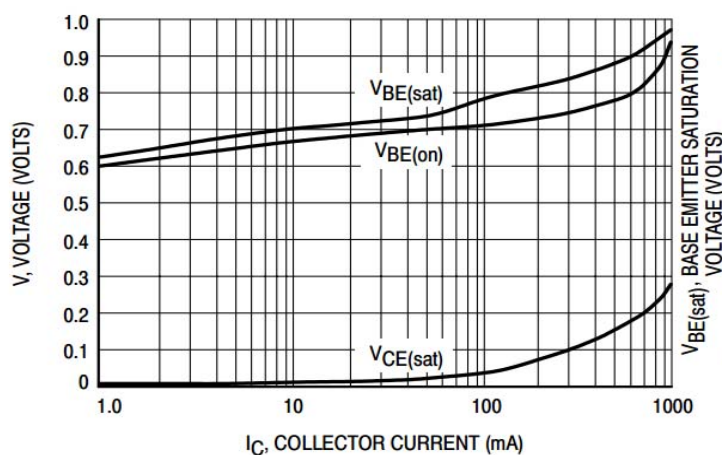


Figure 3. "On" Voltages

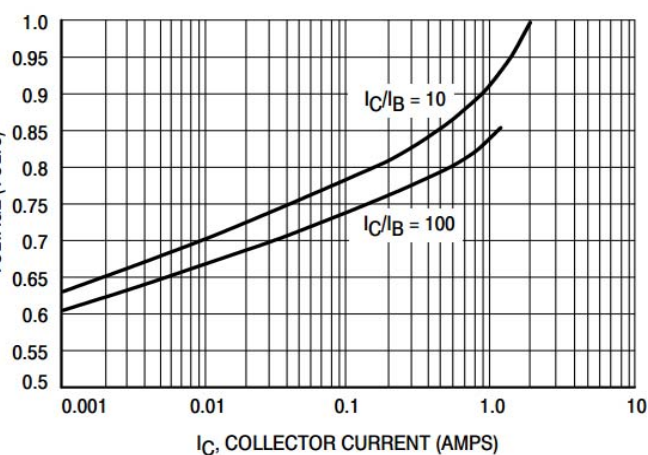


Figure 4. Base Emitter Saturation Voltage versus Collector Current

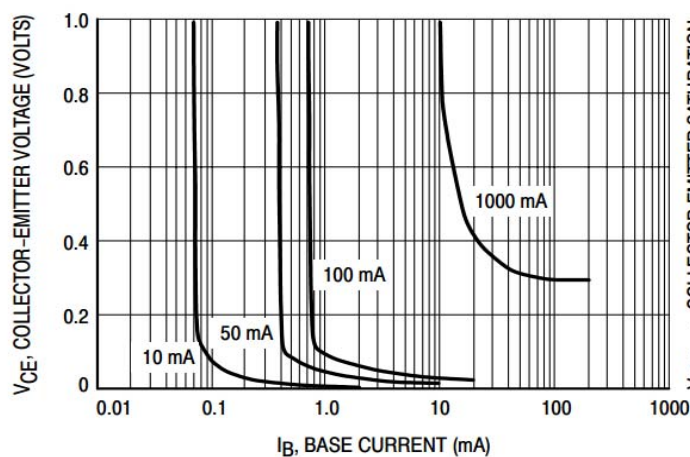


Figure 5. Collector Emitter Saturation Voltage versus Collector Current

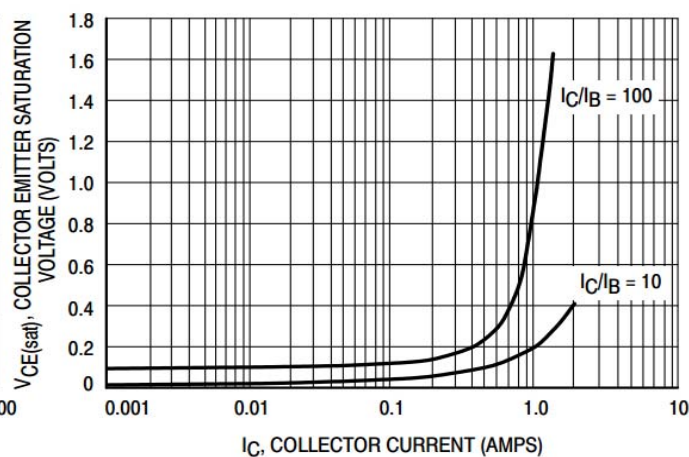


Figure 6. Collector Emitter Saturation Voltage versus Collector Current

CHARACTERISTIC CURVES

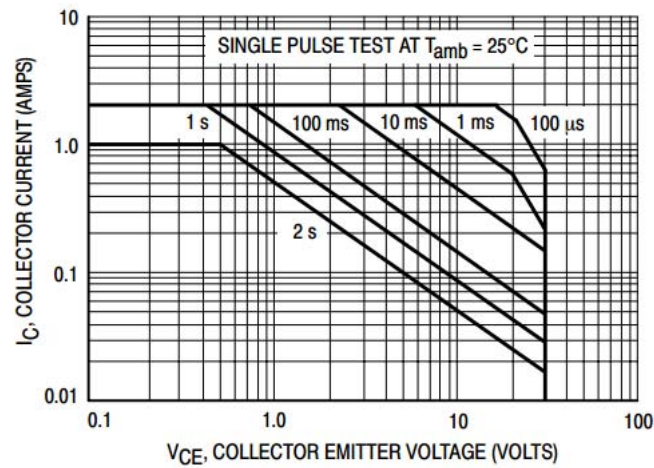


Figure 7. Safe Operating Area

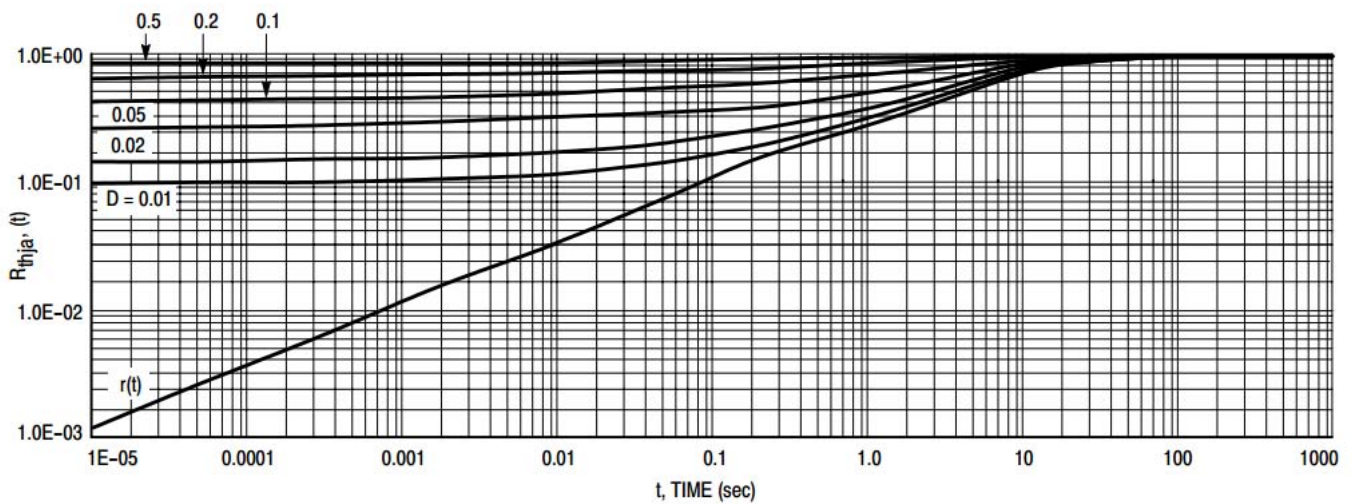


Figure 8. Normalized Thermal Response