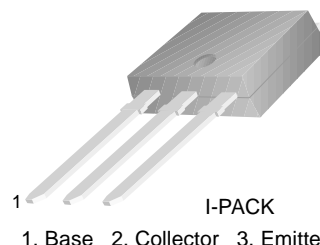


High Power Switching

- Complement to KSA1244



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	5	A
I_B	Base Current	1	A
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	20	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}, I_B = 0$	50			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 50\text{V}, I_E = 0$			1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			1	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 1\text{V}, I_C = 1\text{A}$ $V_{CE} = 1\text{V}, I_C = 3\text{A}$	70 30		240	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}, I_B = 0.15\text{A}$			0.5	V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C = 3\text{A}, I_B = 0.15\text{A}$		0.9	1.2	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 4\text{V}, I_C = 1\text{A}$		120		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		80		pF
t_{ON}	Turn ON Time	$V_{CC} = 30\text{V}, I_C = 3\text{A}$		0.1		μs
t_{STG}	Storage Time	$I_{B1} = - I_{B2} = 0.15\text{A}$		1		μs
t_F	Fall Time	$R_L = 10\Omega$		0.1		μs

h_{FE} Classification

Classification	O	Y
h_{FE1}	70 ~ 140	120 ~ 240

Typical Characteristics

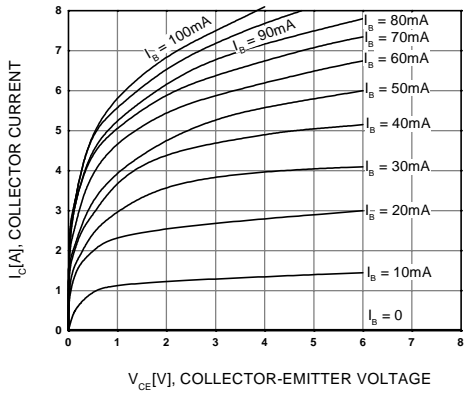


Figure 1. Static Characteristic

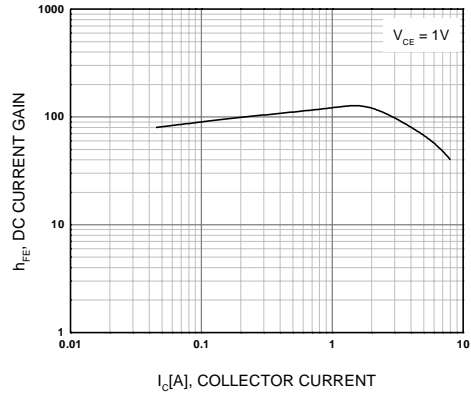


Figure 2. DC current Gain

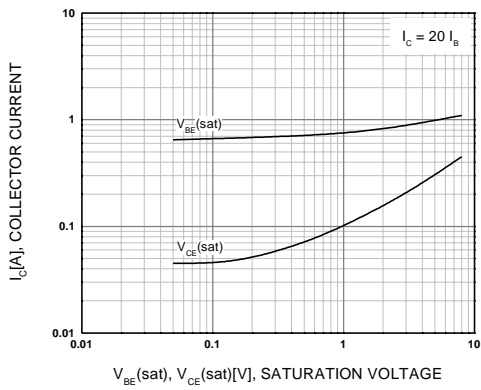


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

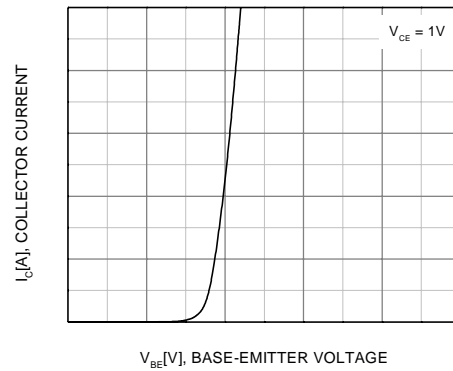


Figure 4. Base-Emitter on Voltage

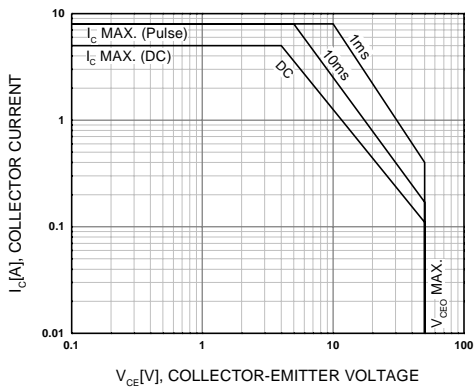


Figure 5. Safe Operating Area

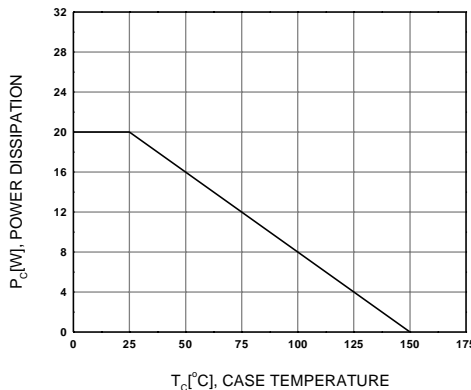


Figure 6. Power Derating

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