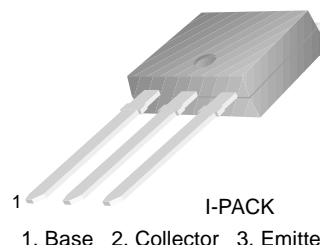


**High Power Switching**

- 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	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			1	$\mu\text{A}$
$h_{FE1}$ $h_{FE2}$	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	$V_{CC} = 30\text{V}, I_C = 3\text{A}$ $I_{B1} = - I_{B2} = 0.15\text{A}$ $R_L = 10\Omega$		0.1		$\mu\text{s}$
$t_{STG}$	Storage Time			1		$\mu\text{s}$
$t_F$	Fall Time			0.1		$\mu\text{s}$

**$h_{FE}$  Classification**

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

# Typical Characteristics

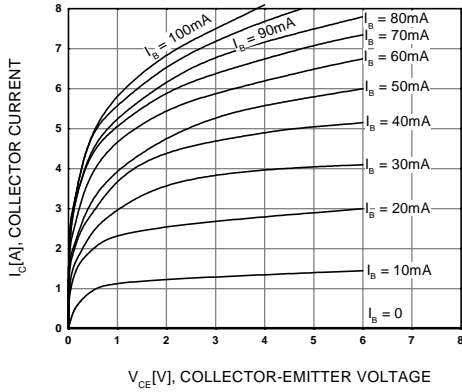


Figure 1. Static Characteristic

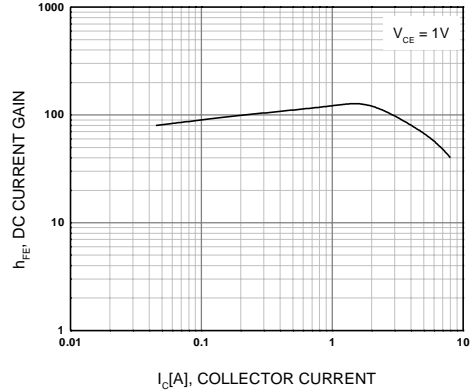


Figure 2. DC current Gain

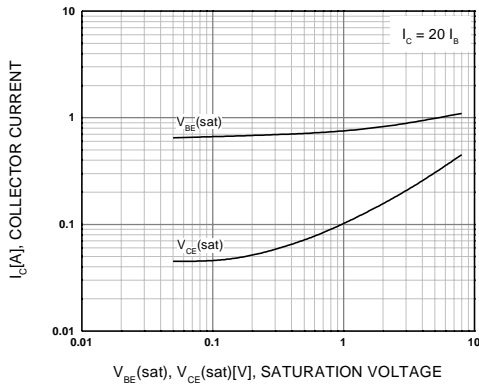


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

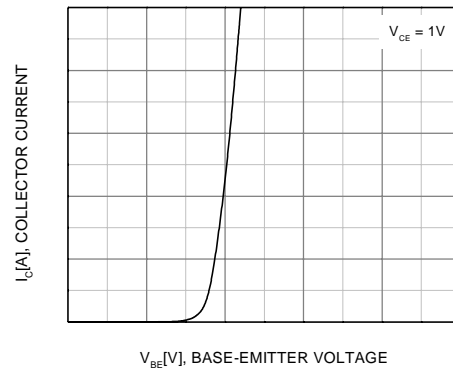


Figure 4. Base-Emitter on Voltage

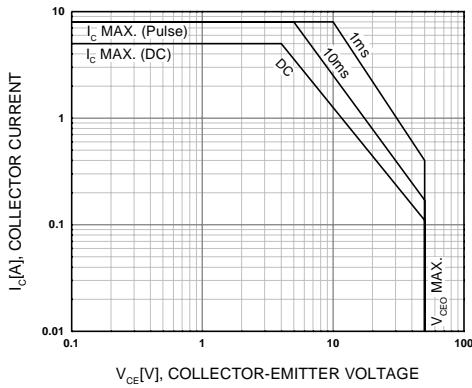


Figure 5. Safe Operating Area

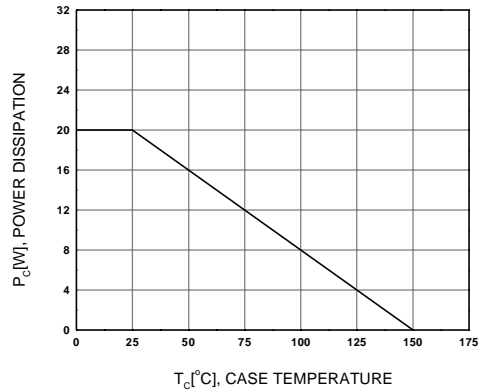
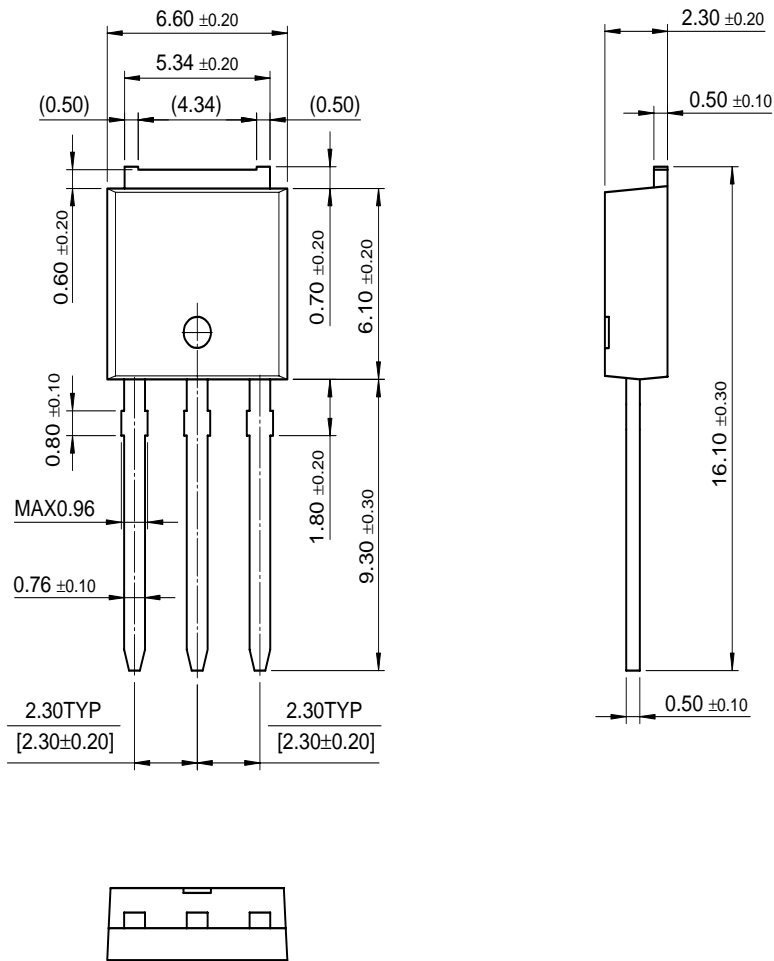


Figure 6. Power Derating

# Package Dimensions

## I-PAK



Dimensions in Millimeters

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CoolFET™	MICROWIRE™	TinyLogic™
CROSSVOLT™	POP™	UHC™
E <sup>2</sup> CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
FACT Quiet Series™	QS™	
FAST®	Quiet Series™	
FAST <sub>r</sub> ™	SuperSOT™-3	
GTO™	SuperSOT™-6	

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