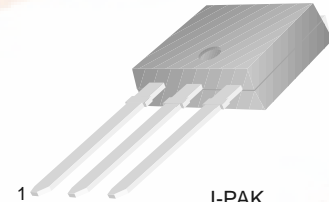


**FAIRCHILD**  
SEMICONDUCTOR®

## KSD1222

### Power Amplifier Applications

- High DC Current Gain
- Low Collector-Emitter Saturation Voltage
- Built in a Damper Diode at E-C
- Darlington TR
- Complement to KSB907



I-PAK  
1. Base 2. Collector 3. Emitter

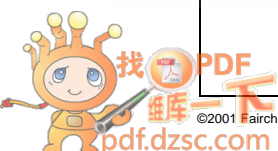
### NPN Epitaxial Silicon Transistor

#### 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	40	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	3	A
$I_B$	Base Current	0.3	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	15	W
	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1	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	$I_C = 25\text{mA}, I_B = 0$	40			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 60\text{V}, I_E = 0$			20	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			2.5	mA
$h_{FE1}$ $h_{FE2}$	DC Current Gain	$V_{CE} = 2\text{V}, I_C = 1\text{A}$ $V_{CE} = 2\text{V}, I_C = 3\text{A}$	2000 1000			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 4\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 4\text{mA}$			2	V
$t_{ON}$	Turn On Time	$V_{CC} = 30\text{V}, I_C = 3\text{A}$		0.1		$\mu\text{s}$
$t_{STG}$	Storage Time	$I_{B1} = -I_{B2} = 6\text{mA}$ $R_L = 10\Omega$		1		$\mu\text{s}$
$t_F$	Fall Time			0.2		$\mu\text{s}$



# Typical Characteristics

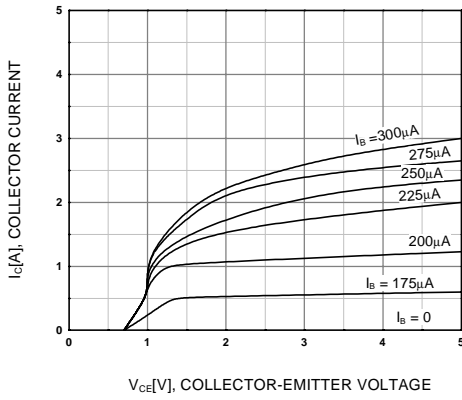


Figure 1. Static Characteristic

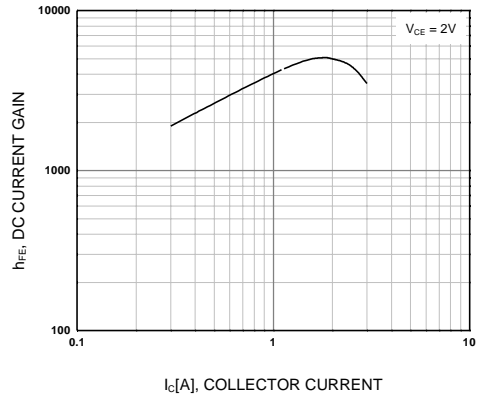


Figure 2. DC current Gain

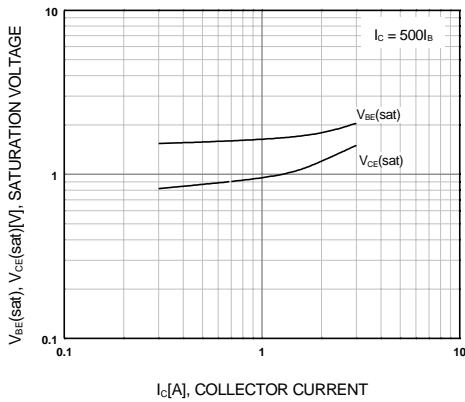


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

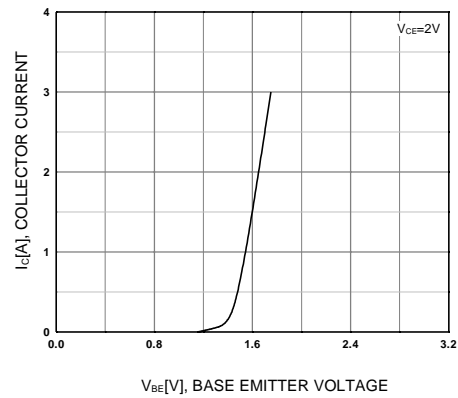


Figure 4. Base-Emitter On Voltage

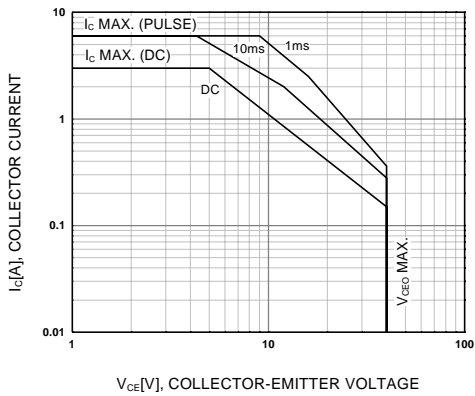


Figure 5. Safe Operating Area

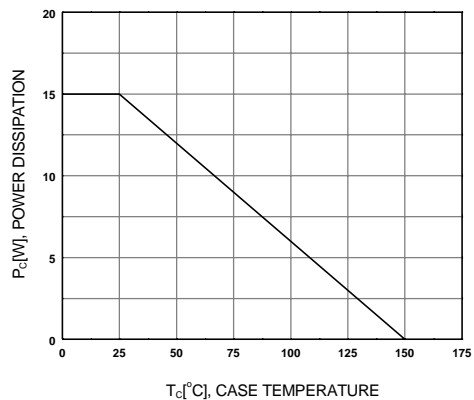
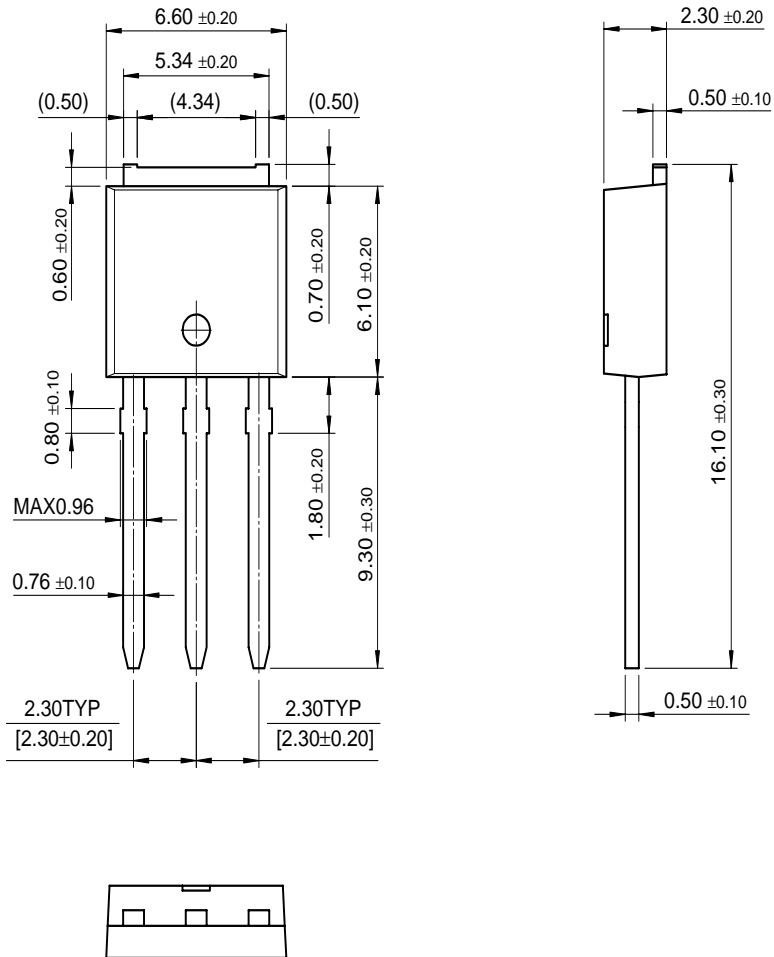


Figure 6. Power Derating

# Package Dimensions

## I-PAK



Dimensions in Millimeters

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DOME™	HiSeC™	QS™	UHC™
EcoSPARK™	ISOPLANAR™	QT Optoelectronics™	UltraFET®
E <sup>2</sup> CMOS™	LittleFET™	Quiet Series™	VCX™
EnSigna™	MicroFET™	SLIENT SWITCHER®	
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