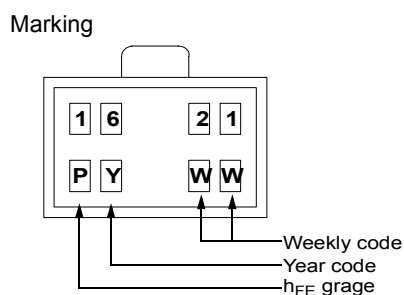
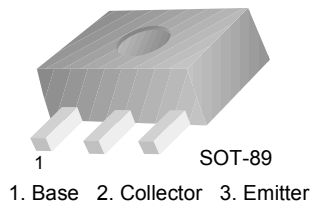


KSD1621

NPN Epitaxial Silicon Transistor

High Current Driver Applications

- Low Collector-Emitter Saturation Voltage
- Large Current Capacity and Wide SOA
- Fast Switching Speed
- Complement to KSB1121



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

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	2	A
P_C P_C^*	Collector Power Dissipation	500 1.3	mW W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

Mounted on Ceramic Board (250mm² x 0.8mm)

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$, $I_E = 0$	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}$, $I_B = 0$	25			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$, $I_C = 0$	6			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 20\text{V}$, $I_E = 0$			100	nA
I_{EBO}	Emitter Cut-off Current	$V_{BE} = 4\text{V}$, $I_C = 0$			100	nA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 2\text{V}$, $I_C = 0.1\text{A}$ $V_{CE} = 2\text{V}$, $I_C = 1.5\text{A}$	100 65		560	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1.5\text{A}$, $I_B = 75\text{mA}$		0.18	0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 1.5\text{A}$, $I_B = 75\text{mA}$		0.85	1.2	V

Electrical Characteristics (Continued) $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
f_T	Current Gain Bandwidth product	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$		150		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$		19		pF
t_{ON}	Turn On Time *	$V_{CC} = 12\text{V}, V_{BE} = 5\text{V}$ $I_{B1} = -I_{B2} = 25\text{mA}$ $I_C = 0.5\text{A}, R_L = 25\Omega$		60		ns
t_{STG}	Storage Time *			500		ns
t_F	Fall Time *			25		ns

 h_{FE} Classification

Classification	R	S	T	U
h_{FE}	100 ~ 200	140 ~ 280	200 ~ 400	280 ~ 560

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
1621	KSD1621	SOT-89	13"	--	4,000

Typical Performance Characteristics

Figure 1. Static Characteristic

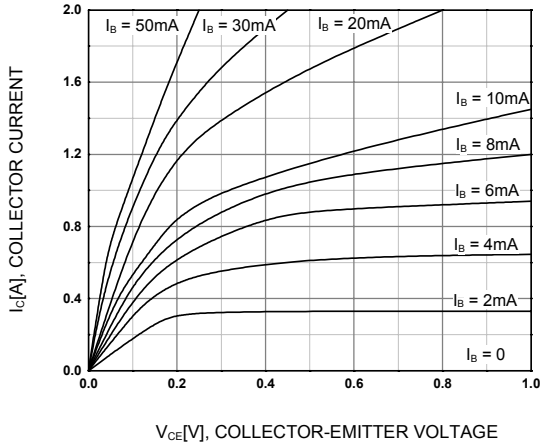


Figure 2. DC Current Gain

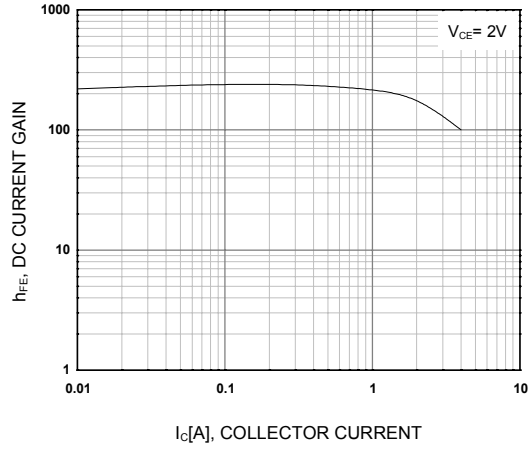


Figure 3. DC Collector-Emitter Saturation Voltage

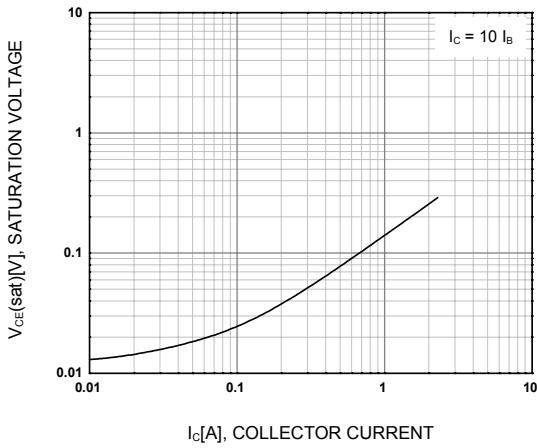


Figure 4. Base-Emitter On Voltage

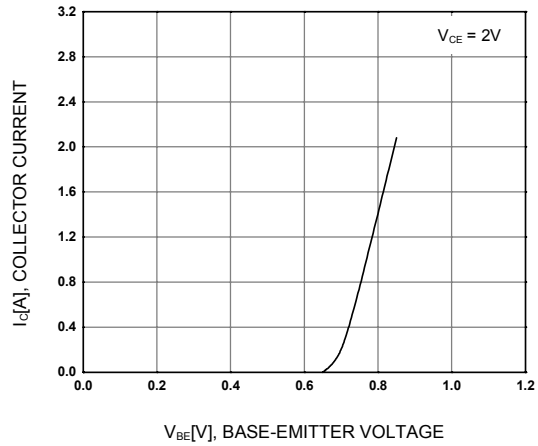


Figure 5. Collector Output Capacitance

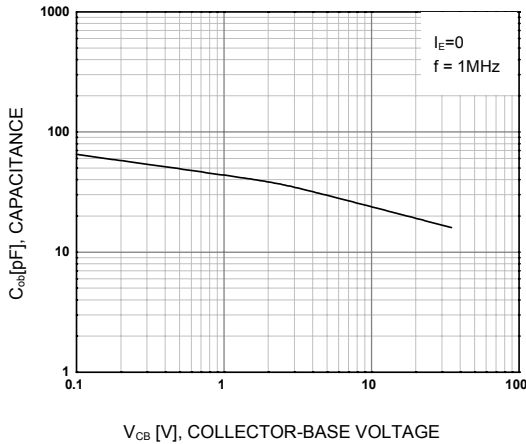
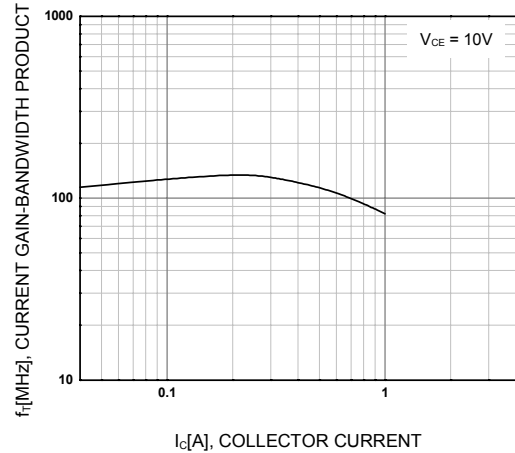


Figure 6. Current Gain Bandwidth Product



Typical Performance Characteristics (Continued)

Figure 7. Safe Operating Area

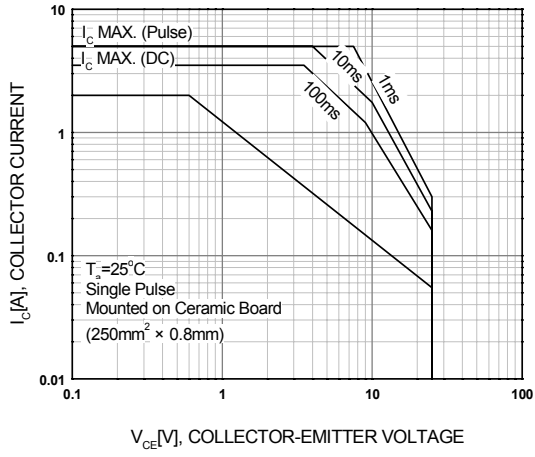
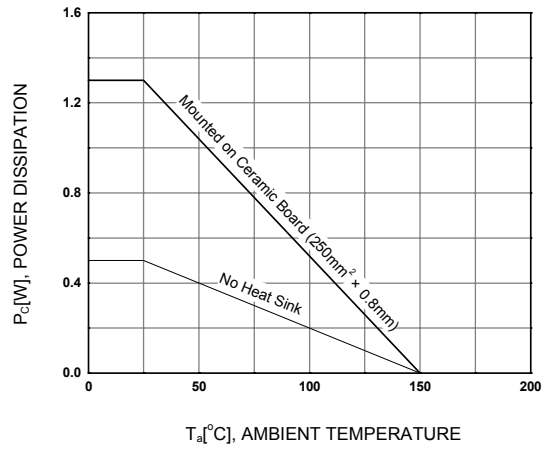
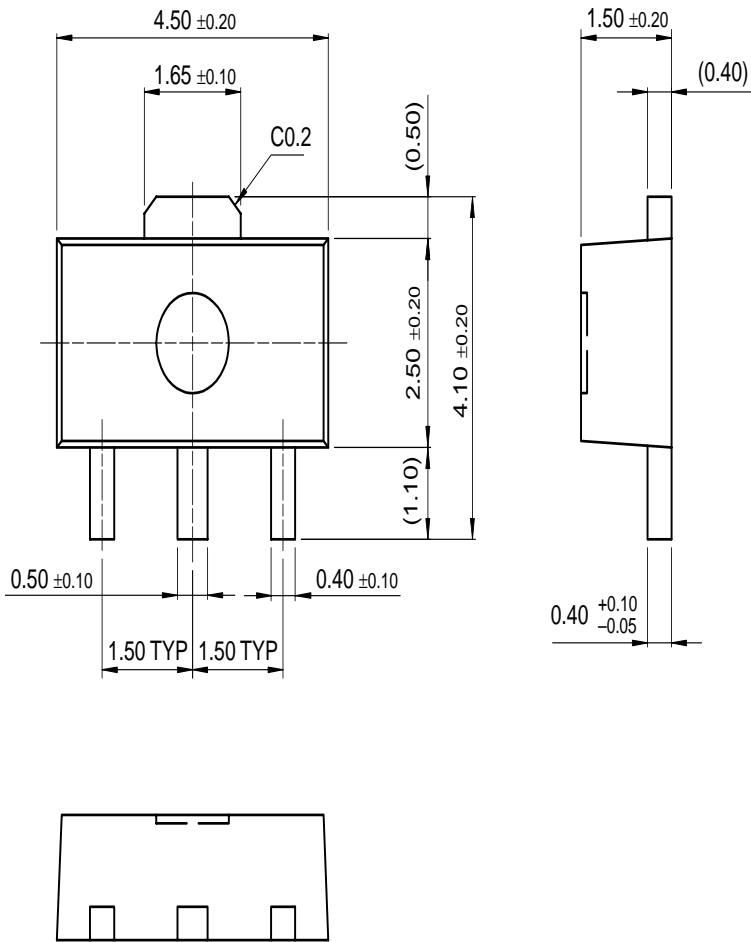


Figure 8. Power Derating



Mechanical Dimensions

SOT-89



Dimensions in Millimeters

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CROSSVOLT™	GTO™	MICROWIRE™	Quiet Series™	UHC™
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FACT Quiet Series™		OPTOPLANAR™	SPM™	
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The Power Franchise®		POP™	SuperFET™	
Programmable Active Droop™		Power247™	SuperSOT™-3	
		PowerEdge™	SuperSOT™-6	

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