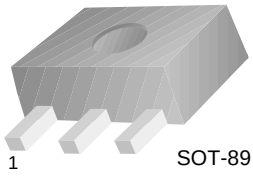
FAIRCHILD
SEMICONDUCTOR®

KSD1621

High Current Driver Applications

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



1 SOT-89

1. Base 2. Collector 3. Emitter

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°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	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

* Mounted on Ceramic Board (250mm^{2}x0.8mm)

Electrical Characteristics T_a=25°C unless otherwise noted

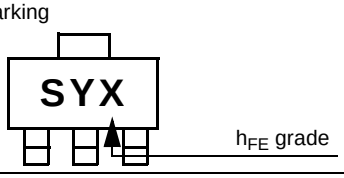
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C=10μA, I_E=0	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=1mA, I_B=0	25			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=10μA, I_C=0	6			V
I_{CBO}	Collector Cut-off Current	V_{CB}=20V, I_E=0			100	nA
I_{EBO}	Emitter Cut-off Current	V_{BE}=4V, I_C=0			100	nA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE}=2V, I_C=0.1A V_{CE}=2V, I_C=1.5A	100 65		560	
V_{CE} (sat)	Collector-Emitter Saturation Voltage	I_C=1.5A, I_B=75mA		0.18	0.4	V
V_{BE} (sat)	Base-Emitter Saturation Voltage	I_C=1.5A, I_B=75mA		0.85	1.2	V
f_T	Current Gain Bandwidth product	V_{CE}=10V, I_C=50mA		150		MHz
C_{ob}	Output Capacitance	V_{CB}=10V, I_E=0, f=1MHz		19		pF
t_{ON}	* Turn On Time	V_{CC}=12V, V_{BE}=5V I_{B1}= -I_{B2}=25mA I_C=0.5A, R_L=25Ω		60		ns
t_{STG}	* Storage Time			500		ns
t_F	* Fall Time			25		ns

* Pulse Width=20μs, Duty Cycle≤1%

h_{FE} Classification

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

Marking



Typical Characteristics

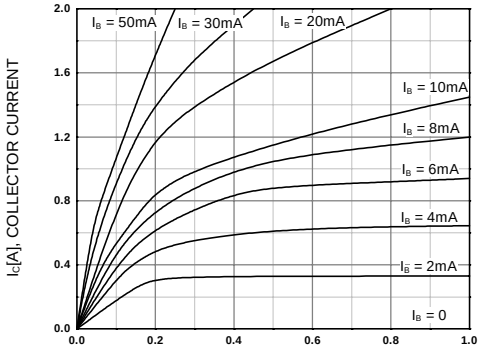


Figure 1. Static Characteristic

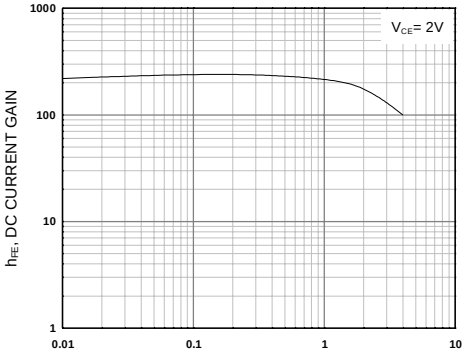


Figure 2. DC current Gain

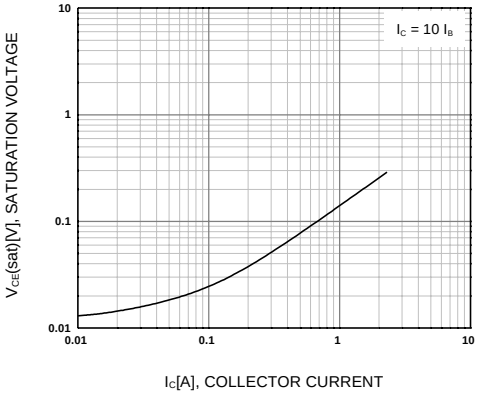


Figure 3. Collector-Emitter Saturation Voltage

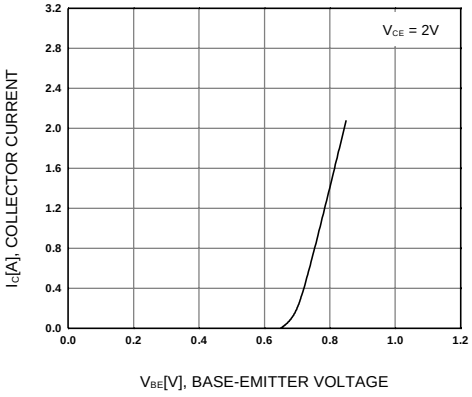


Figure 4. Base-Emitter On Voltage

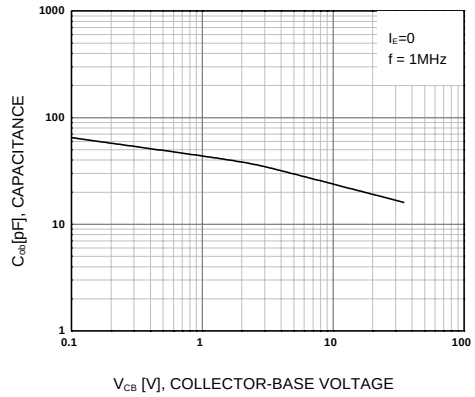


Figure 5. Collector Output Capacitance

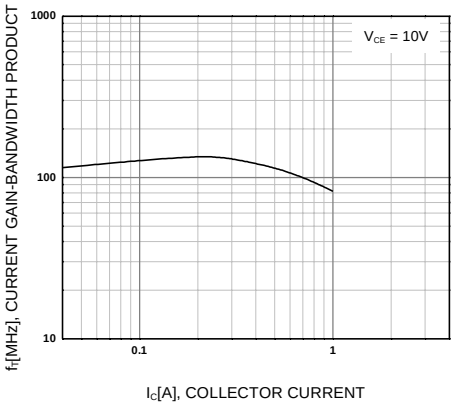


Figure 6. Current Gain Bandwidth Product

Typical Characteristics (Continued)

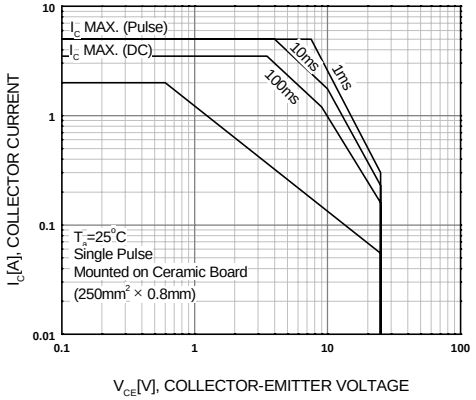


Figure 7. Safe Operating Area

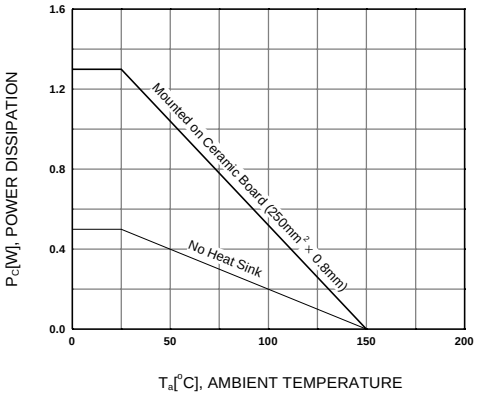
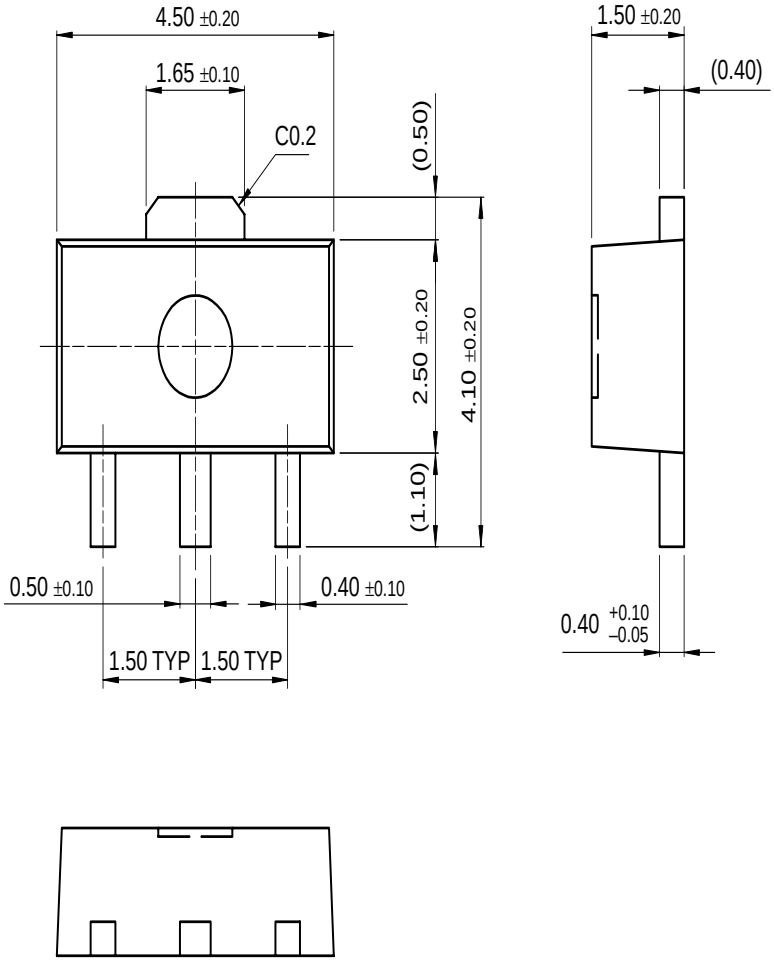


Figure 8. Power Derating

Package Dimensions

SOT-89



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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Definition of Terms

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