

KSC2500

Medium Power Amplifier & Low Saturation



NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CES}	Collector-Emitter Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	10	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current (DC)	2	A
I_{CP}	* Collector Current (Pulse)	5	A
I_B	Base Current	0.5	A
P_C	Collector Power Dissipation	900	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, Duty Cycles $\leq 30\%$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB}=30\text{V}$, $I_E=0$			100	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=6\text{V}$, $I_C=0$			100	nA
BV_{CBO}	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$, $I_B=0$	10			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}$, $I_C=0$	6			V
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE}=1\text{V}$, $I_C=0.5\text{A}$ $V_{CE}=1\text{V}$, $I_C=2\text{A}$	140 70	200	600	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}$, $I_B=50\text{mA}$		0.2	0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE}=1\text{V}$, $I_C=2\text{A}$		0.86	1.5	V
f_T	Current Gain Bandwidth Product	$V_{CE}=1\text{V}$, $I_C=0.5\text{A}$		150		MHz
C_{ob}	Output Capacitance	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		27		pF

h_{FE1} Classification

Classification	A	B	C	D
h_{FE1}	140 ~ 240	200 ~ 330	300 ~ 450	420 ~ 600

Typical Characteristics

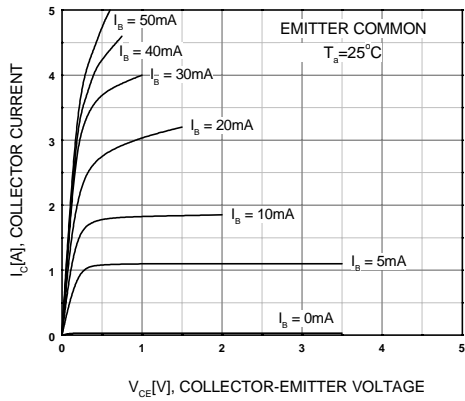


Figure 1. Static Characteristic

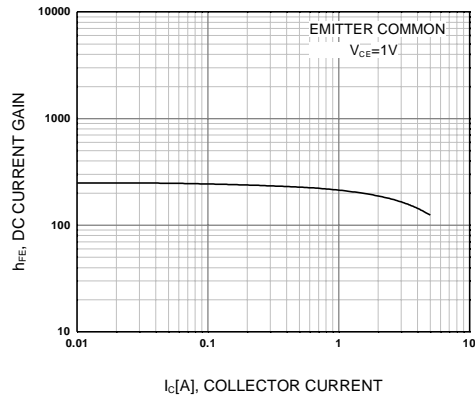


Figure 2. DC current Gain

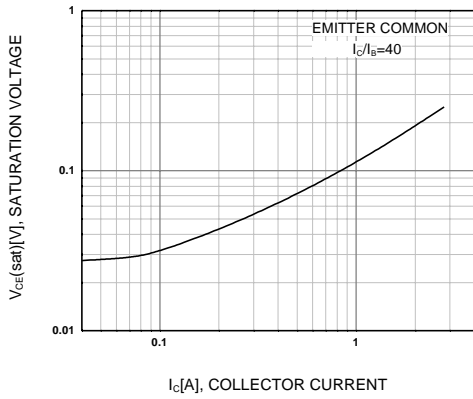


Figure 3. Collector-Emitter Saturation Voltage

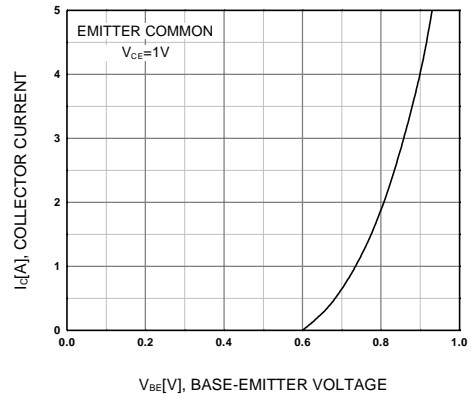


Figure 4. Base-Emitter On Voltage

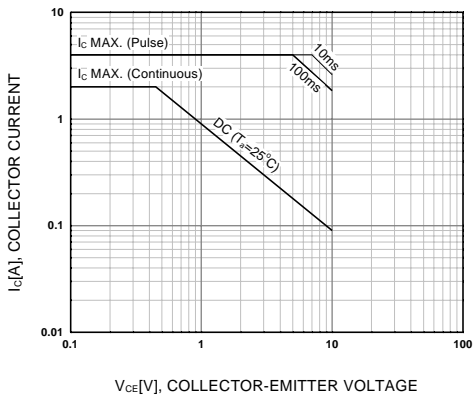
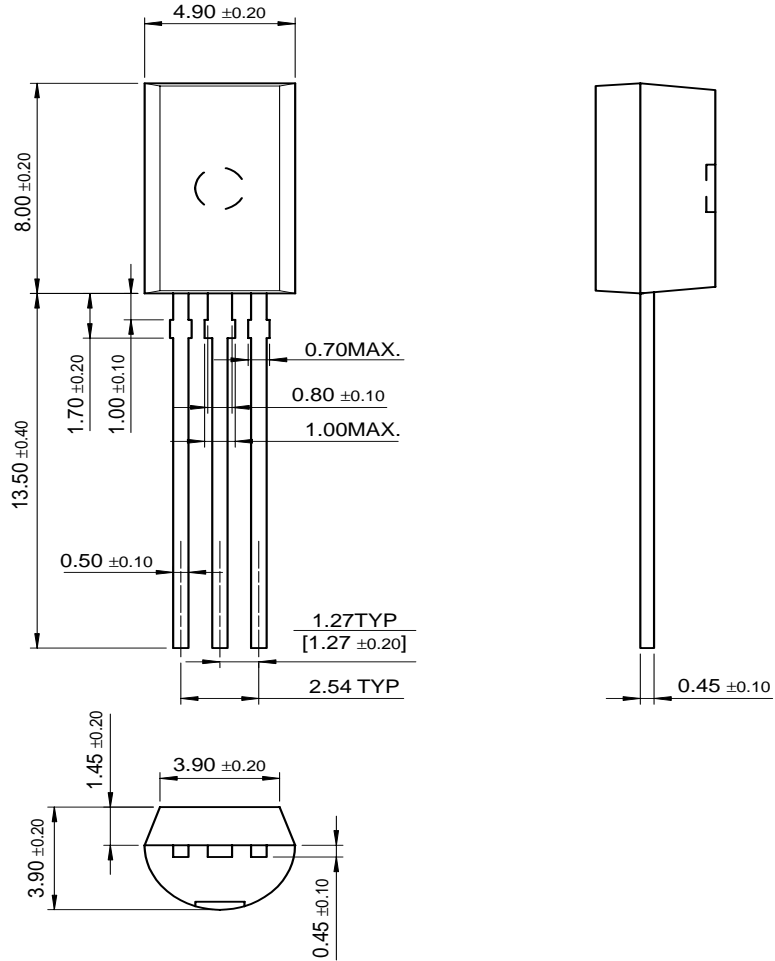


Figure 5. Safe Operating Area

Package Dimensions

TO-92L



Dimensions in Millimeters

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