

# KSC2500

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## 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

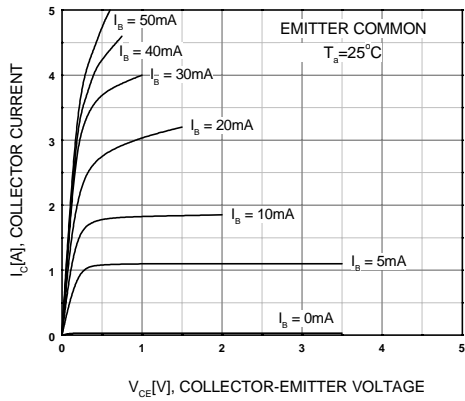


Figure 1. Static Characteristic

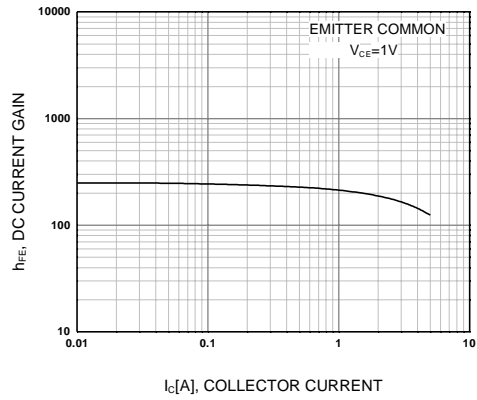


Figure 2. DC current Gain

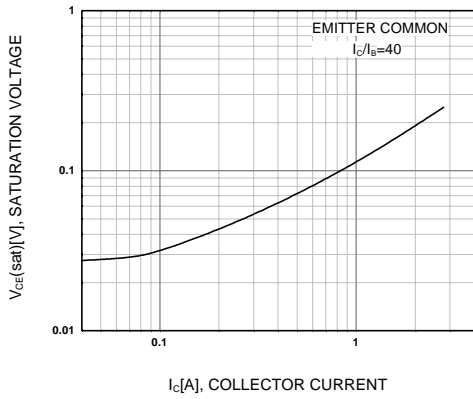


Figure 3. Collector-Emitter Saturation Voltage

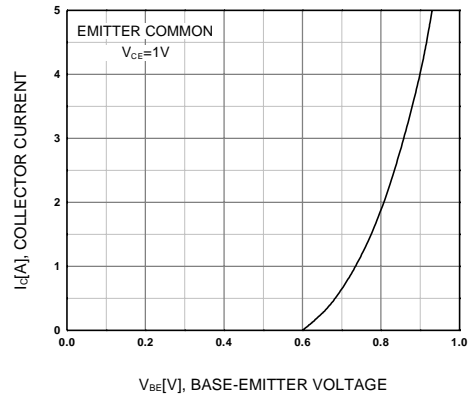


Figure 4. Base-Emitter On Voltage

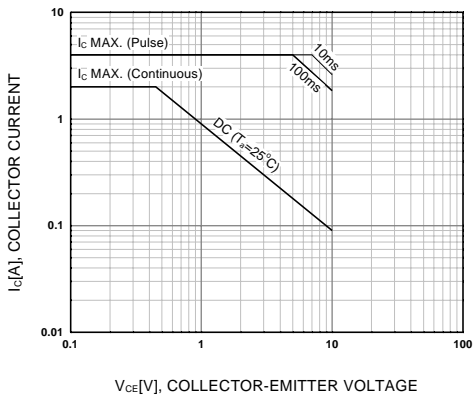
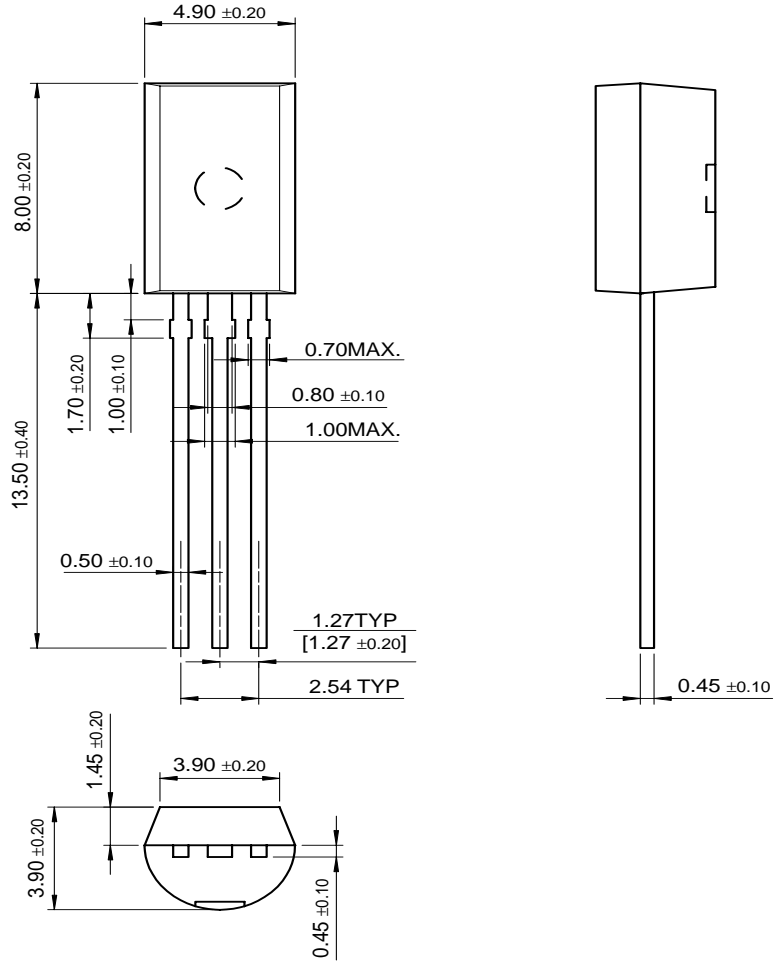


Figure 5. Safe Operating Area

# Package Dimensions

## TO-92L



Dimensions in Millimeters

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