

NPN Silicon Power Transistor, VCBO= 800V, VCEO= 450V, IC= 1.5A

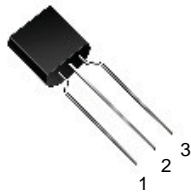
General Description

- High voltage, High speed power switching
- Suitable for Electronic Ballast up to 21W

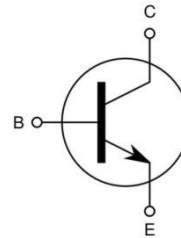
Features

- VCBO = 800V
- VCEO = 450V
- VBEO = 9V
- IC = 1.5A

TO-92



TO-251



Ordering Information

Ordering number	Package	Pin Assignment			Packing
		1	2	3	
KSB13003C	TO-92	B	C	E	Ammo
KSB13003CR	TO-92	E	C	B	Ammo
KSU13003C	TO-251	B	C	E	Tube
KSU13003CR	TO-251	E	C	B	Tube

Absolute Maximum Ratings TC=25°C unless otherwise noted

CHARACTERISTICS	SYMBOL	RATING		UNIT
		TO-92	TO-251	
Collector-Base Voltage	V_{CBO}	800		V
Collector-Emitter Voltage	V_{CEO}	450		V
Emitter-Base Voltage	V_{EBO}	9		V
Collector Current(DC)	I_C	1.5		A
Collector Current(Pulse)	I_{CP}	3		A
Base Current	I_B	0.75		A
Collector Dissipation(Tc=25°C)	P_C	1.1	25	W
Junction Temperature	T_J	150		°C
Storage Temperature	T_{STG}	-65~150		°C

Electrical Characteristics TC=25°C unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	$I_C=500\mu A$, $I_E=0$	800			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=10mA$, $I_B=0$	450			V
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V$, $I_C=0$			1	mA
*DC Current Gain	h_{FE1} h_{FE2}	$V_{CE}=5V$, $I_C=0.2A$ $V_{CE}=5V$, $I_C=1A$	20 6		40	
*Collector-Emitter Saturation Voltage	$V_{CE}(sat)$	$I_C=0.5A$, $I_B=0.1A$			0.8	V
*Base-Emitter Saturation Voltage	$V_{BE}(sat)$	$I_C=0.5A$, $I_B=0.1A$			1.2	V
Output Capacitance	C_{ob}	$V_{CB}=10V$, $f=0.1MHz$		21		pF
Current Gain Bandwidth Product	f_T	$V_{CE}=10V$, $I_C=0.1A$	4			MHz
Turn on Time	t_{on}	$V_{CC}=125V$, $I_C=2A$ $I_{B1}=0.2A$, $I_{B2}=-0.2A$ $R_L=125\Omega$			1.1	μs
Storage Time	t_{sig}				4.0	μs
Fall Time	t_F				0.7	μs

* Pulse Test: Pulse Width \leq 300 μs , Duty Cycles \leq 2%

Typical Characteristics

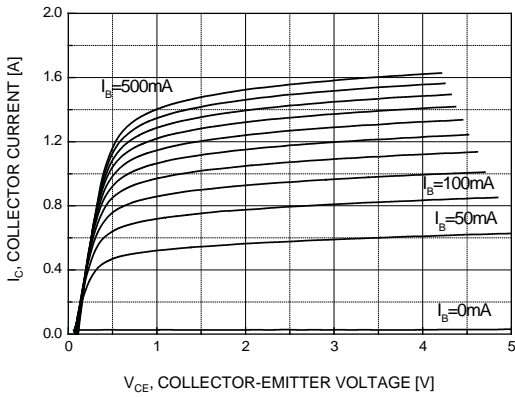


Figure 1. Static Characteristic

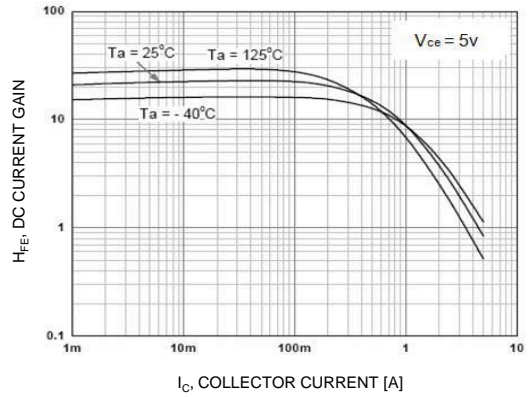


Figure 2. DC Current Gain

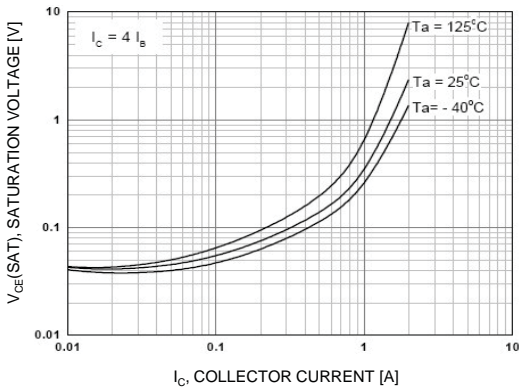


Figure 3. Collector-Emitter Saturation Voltage

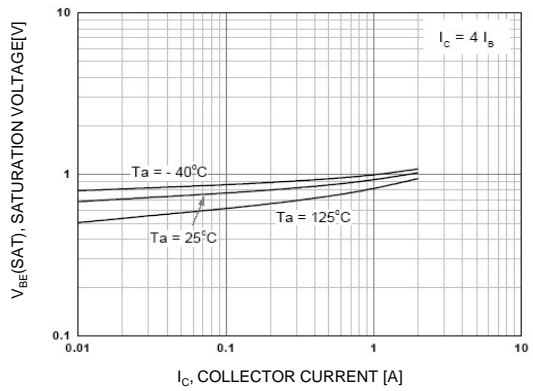


Figure 4. Base-Emitter Saturation Voltage

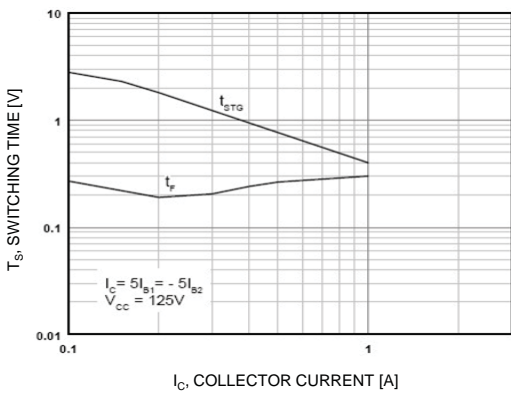


Figure 5. Resistive Load Switching Time

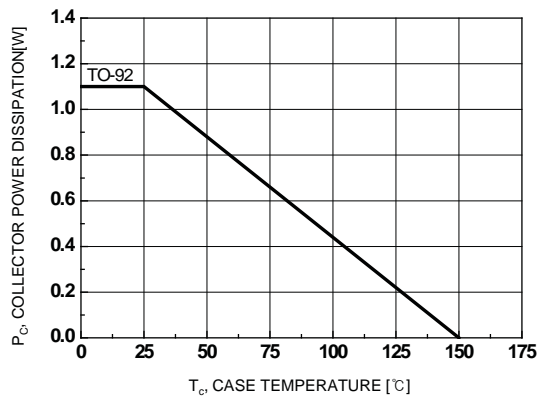


Figure 6. Power Derating

Typical Characteristics

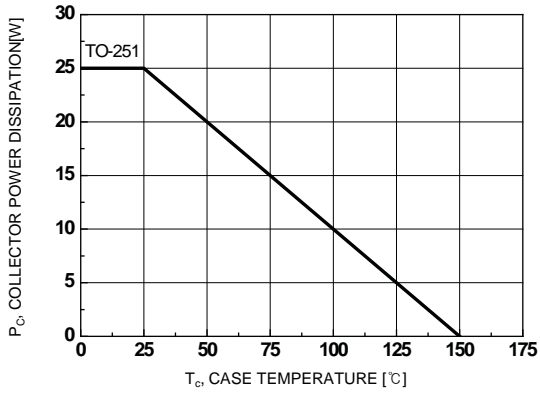
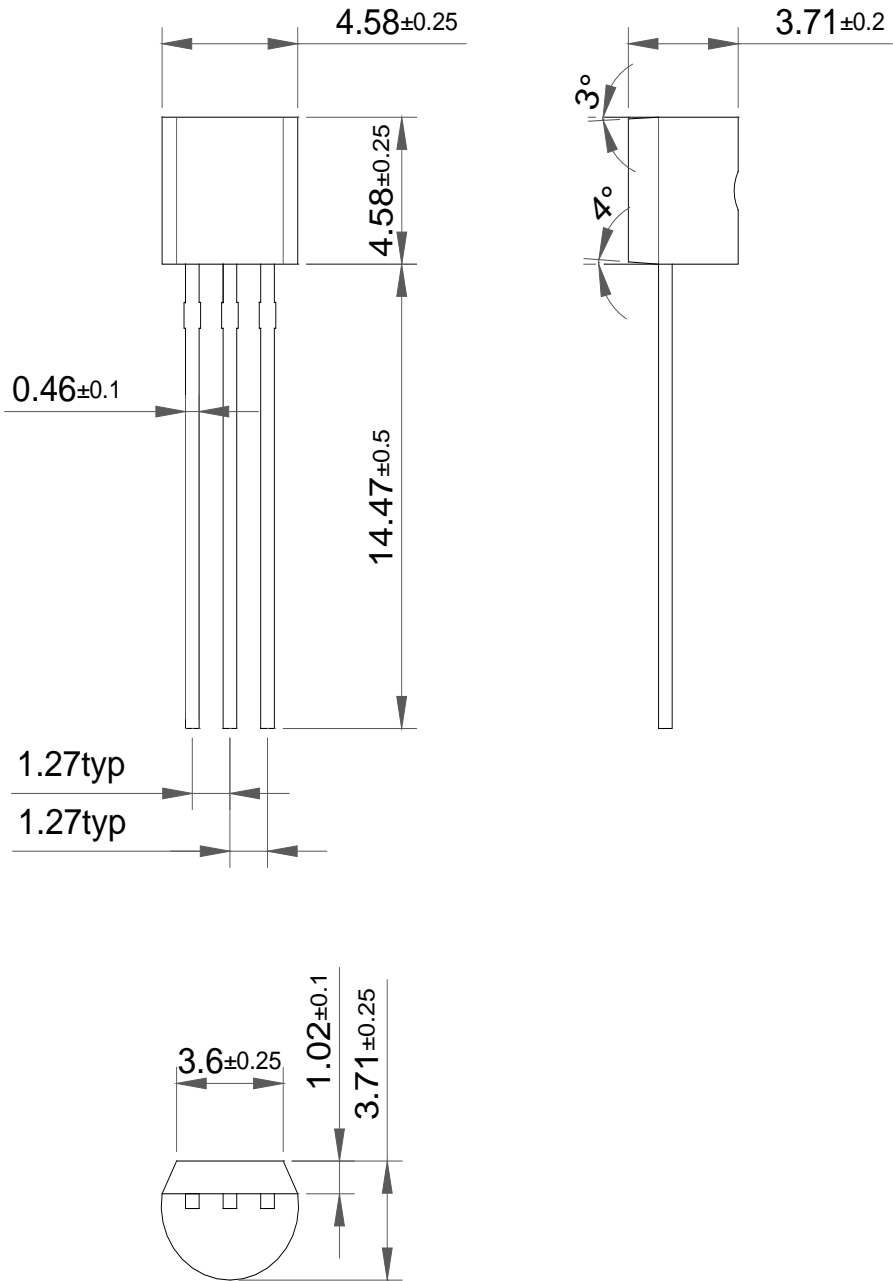


Figure 7. Power Derating

Package Dimension

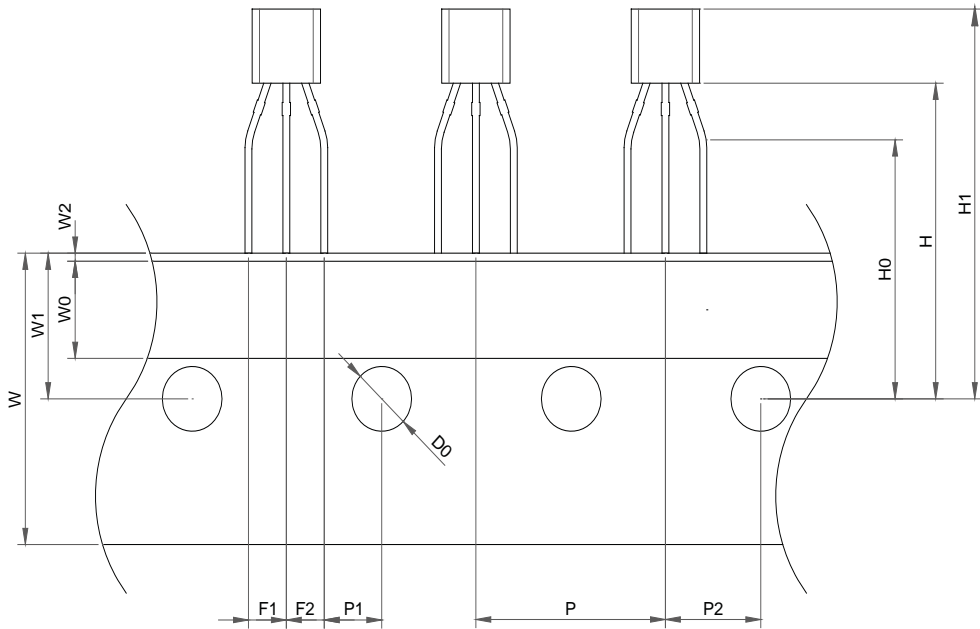
TO-92



Dimensions in Millimeters

Package Dimension

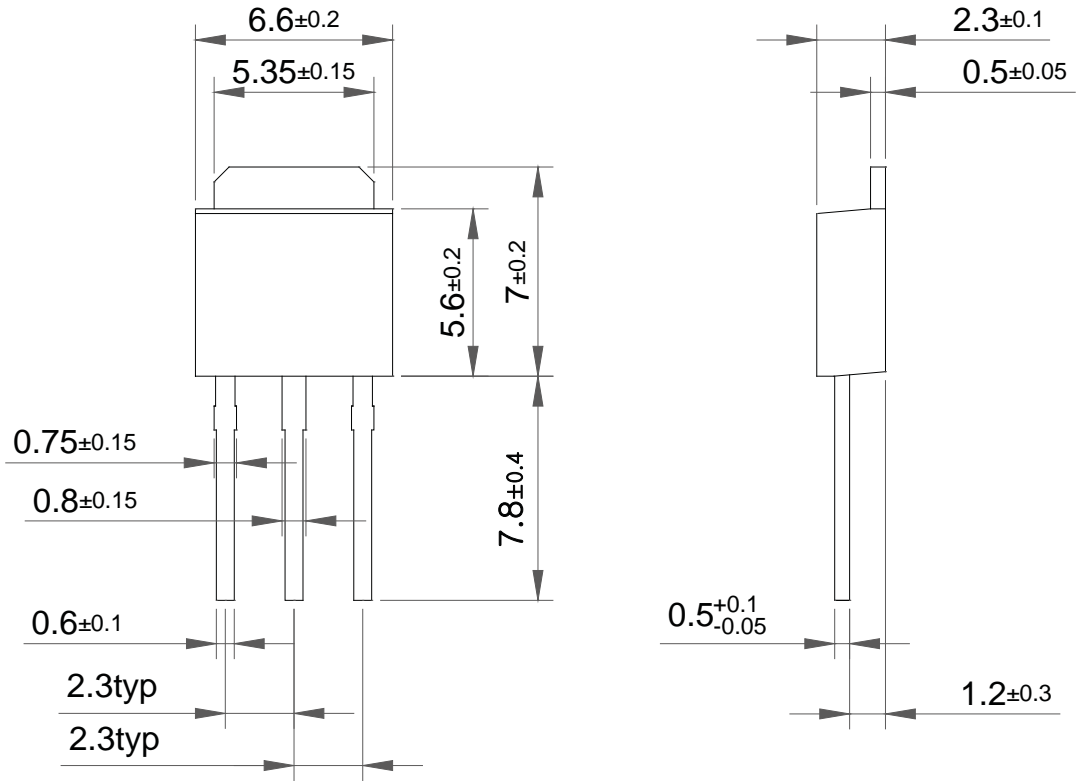
TO-92 TAPING



Item	Symbol	Dimension [mm]	
		Reference	Tolerance
Component pitch	P	12.7	±0.5
Side lead to center of feed hole	P1	3.85	±0.5
Center lead to center of feed hole	P2	6.35	±0.5
Lead pitch	F1,F2	2.5	+0.2/-0.1
Carrier Tape width	W	18.0	+1.0/-0.5
Adhesive tape width	W0	6.0	±0.5
Tape feed hole location	W1	9.0	±0.5
Adhesive tape position	W2	1.0 MAX	
Center of feed hole to bottom of component	H	19.5	±1
Center of feed hole to lead form	H0	16.0	±0.5
Component height	H1	27.0 max	
Tape feed hole diameter	D0	4.0	±0.2

Package Dimension

TO-251



Dimensions in Millimeters