

KSB13003H KSC13003H / KSU13003H

NPN Silicon Power Transistor, $V_{CBO} = 900V$, $V_{CEO} = 530V$, $I_C = 1.5A$

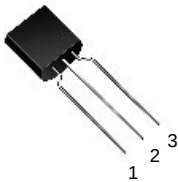
General Description

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

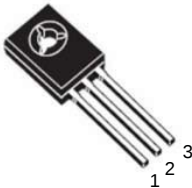
Features

- $V_{CBO} = 900V$
- $V_{CEO} = 530V$
- $V_{BEO} = 9V$
- $I_C = 1.5A$

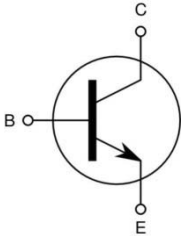
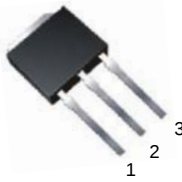
TO-92



TO-126



TO-251



Ordering Information

Ordering number	Package	Pin Assignment			Packing
		1	2	3	
KSB13003H	TO-92	B	C	E	Ammo
KSB13003HR	TO-92	E	C	B	Ammo
KSC13003H	TO-126	B	C	E	Bulk
KSU13003H	TO-251	B	C	E	Tube

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NPN Silicon Power Transistor, $V_{CBO}=900V$, $V_{CEO}=530V$, $I_C=1.5A$

Absolute Maximum Ratings

 $T_C=25^{\circ}C$ unless otherwise noted

CHARACTERISTICS	SYMBOL	RATING			UNIT
		TO-92	TO-126	TO-251	
Collector-Base Voltage	V_{CBO}	900			V
Collector-Emitter Voltage	V_{CEO}	530			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($T_C=25^{\circ}C$)	P_C	1.1	20	25	W
Junction Temperature	T_J	150			$^{\circ}C$
Storage Temperature	T_{STG}	-65~150			$^{\circ}C$

Electrical Characteristics

 $T_C=25^{\circ}C$ unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	$I_C=500\mu A$, $I_E=0$	900			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=10mA$, $I_B=0$	530			V
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V$, $I_C=0$			1	mA
*DC Current Gain	h_{FE1} h_{FE2} h_{FE3}	$V_{CE}=10V$, $I_C=1mA$ $V_{CE}=10V$, $I_C=0.4A$ $V_{CE}=10V$, $I_C=1A$	15 20 6		40	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1.0A$, $I_B=0.25A$			1.0	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.0A$, $I_B=0.25A$			1.5	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_{stg}				4.0	μs
Fall Time	t_F				0.7	μs

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Characteristics

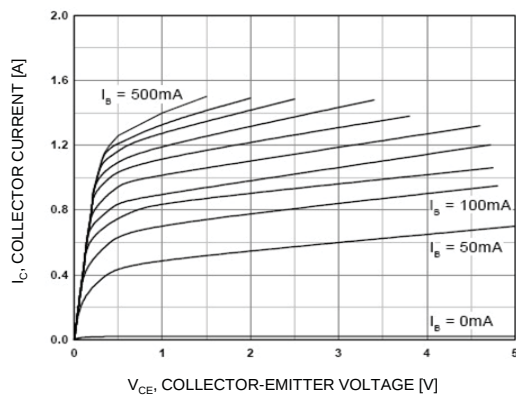


Figure 1. Static Characteristic

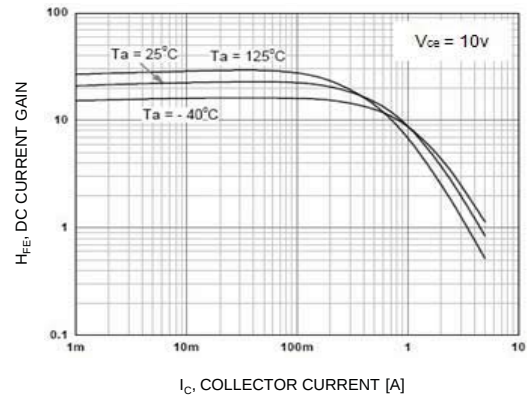


Figure 2. DC Current Gain

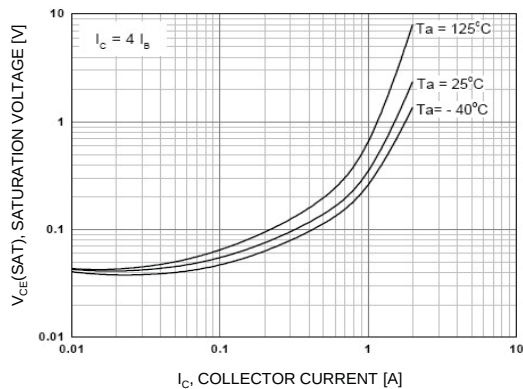


Figure 3. Collector-Emitter Saturation Voltage

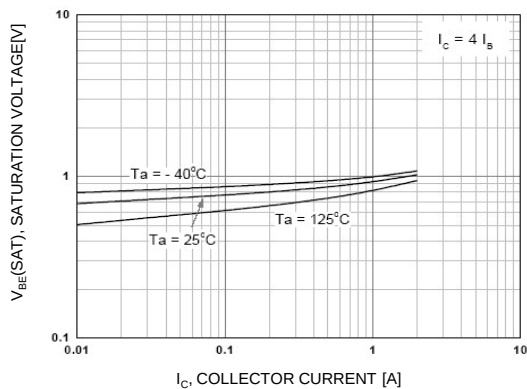


Figure 4. Base-Emitter Saturation Voltage

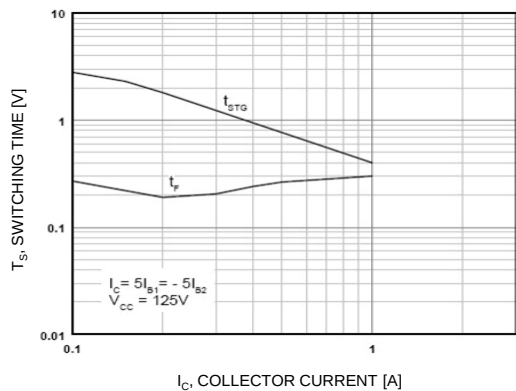


Figure 5. Resistive Load Switching Time

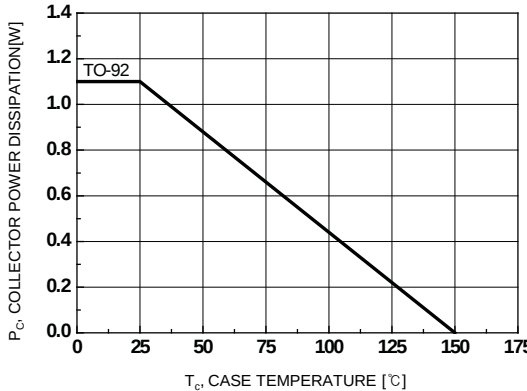


Figure 6. Power Derating

Typical Characteristics

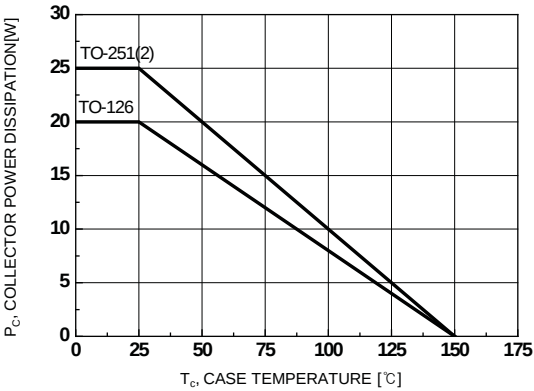
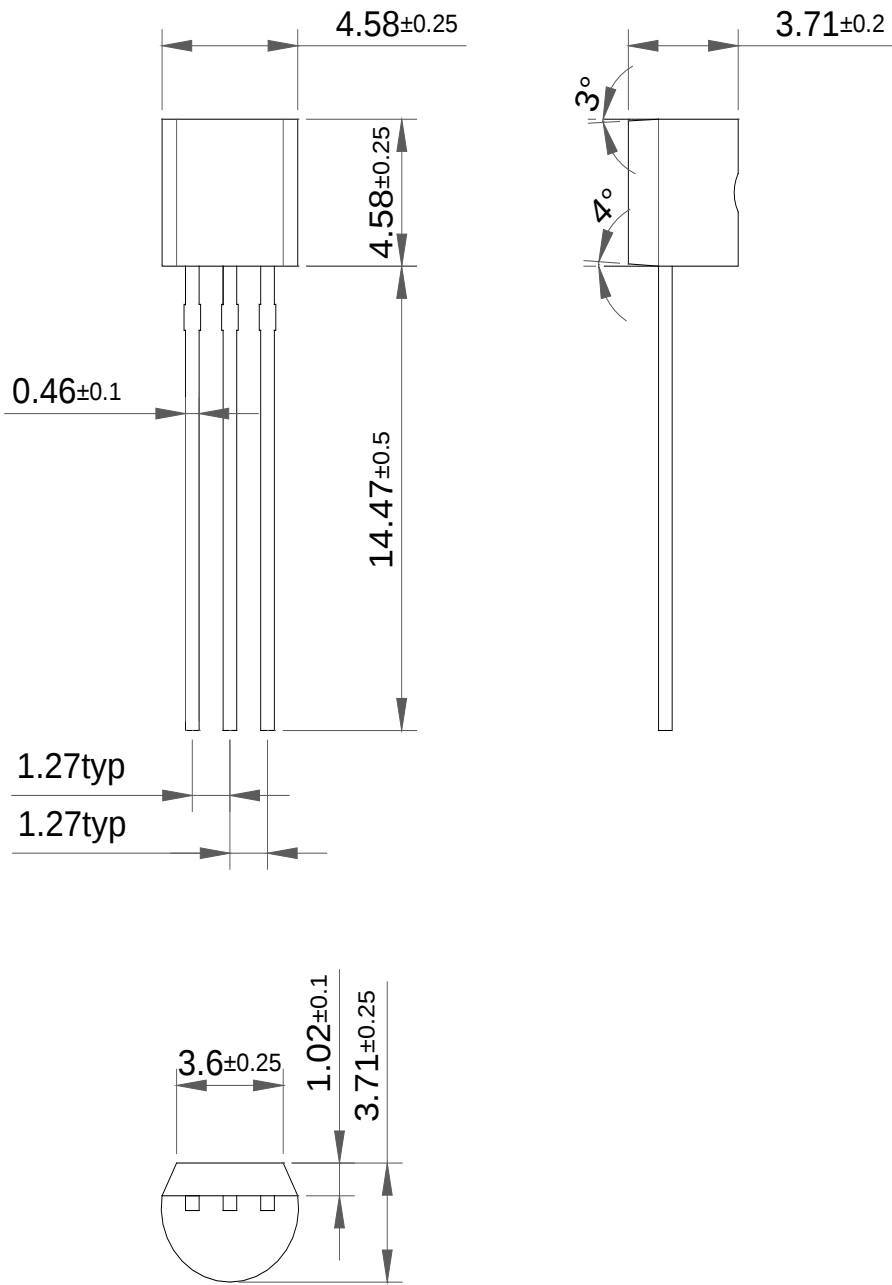


Figure 7. Power Derating

Package Dimension

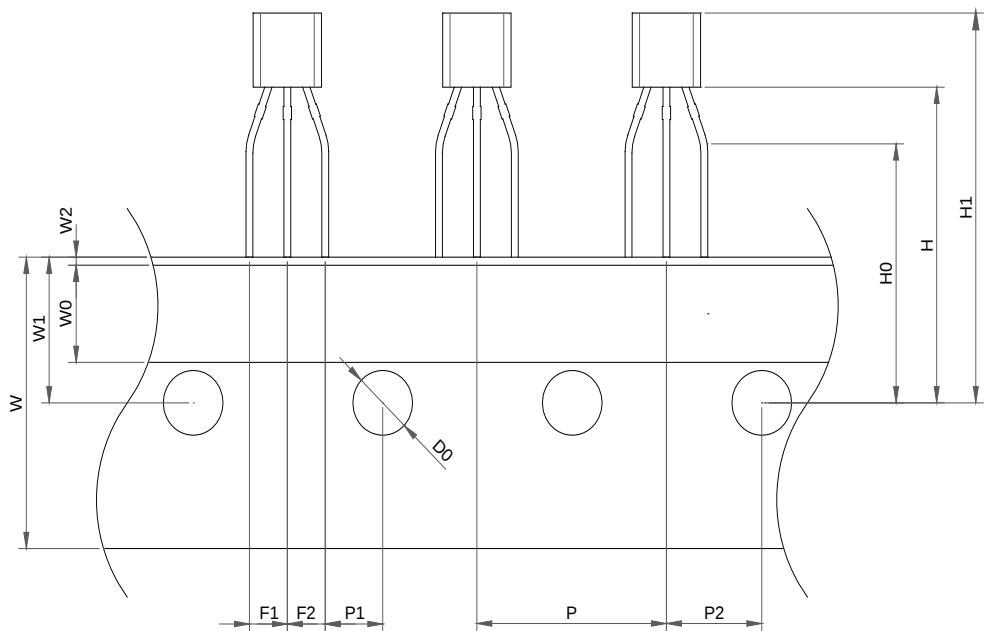
TO-92



Dimensions in Millimeters

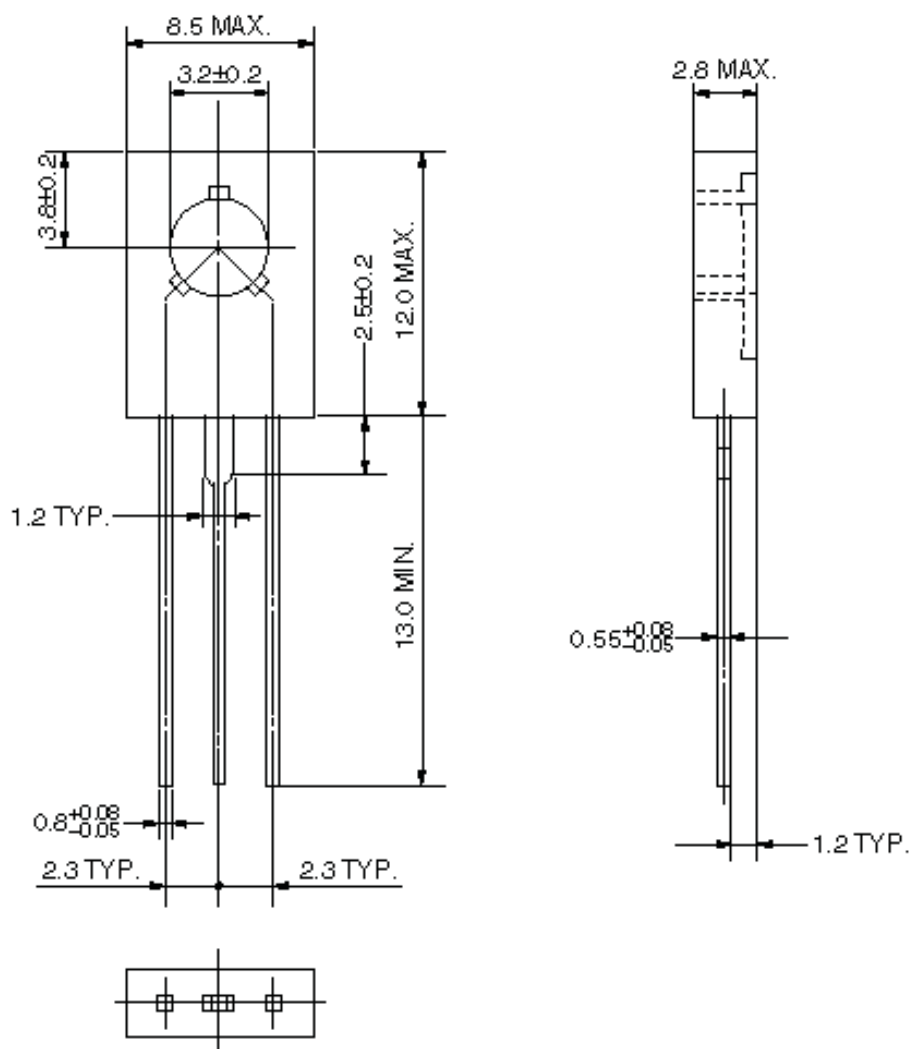
Package Dimension

TO-92 TAPING



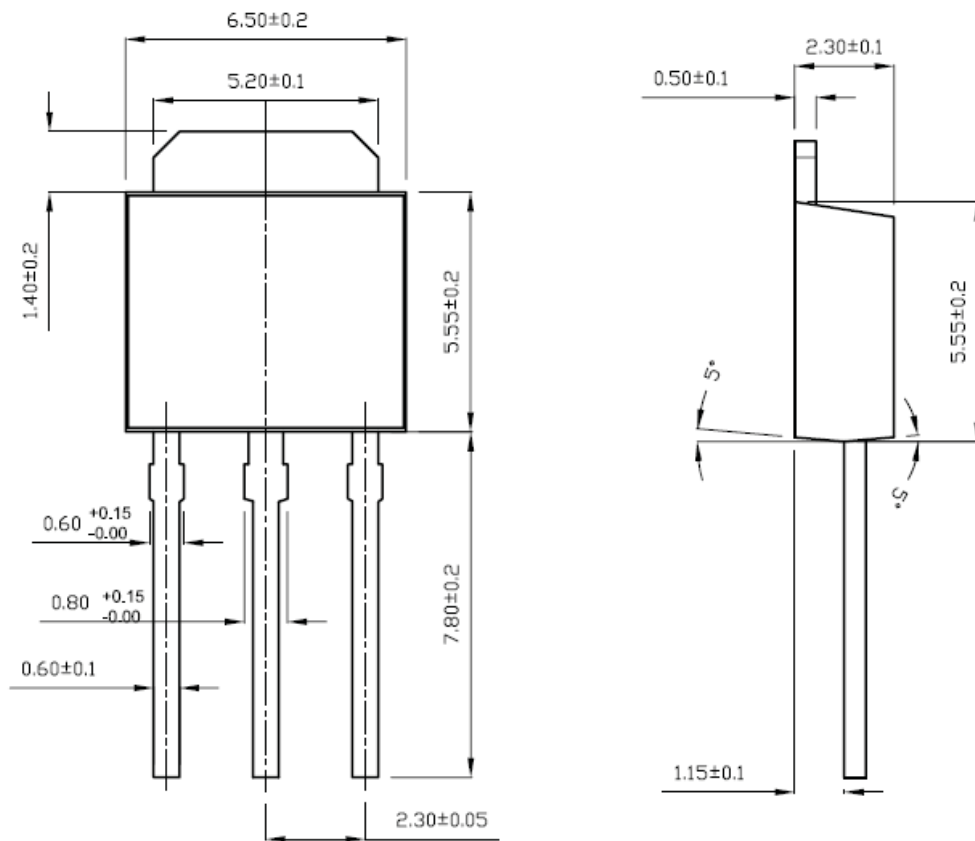
Item	Symbol	Dimension [mm]	
		Reference	Tolerance
Component pitch	P	12.7	±0.5
Side lead to center of feed hole	P1	3.85	±0.5
Center lead to center of feed hole	P2	6.35	±0.5
Lead pitch	F1,F2	2.5	+0.2/-0.1
Carrier Tape width	W	18.0	+1.0/-0.5
Adhesive tape width	W0	6.0	±0.5
Tape feed hole location	W1	9.0	±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

UNIT : mm



Package Dimension

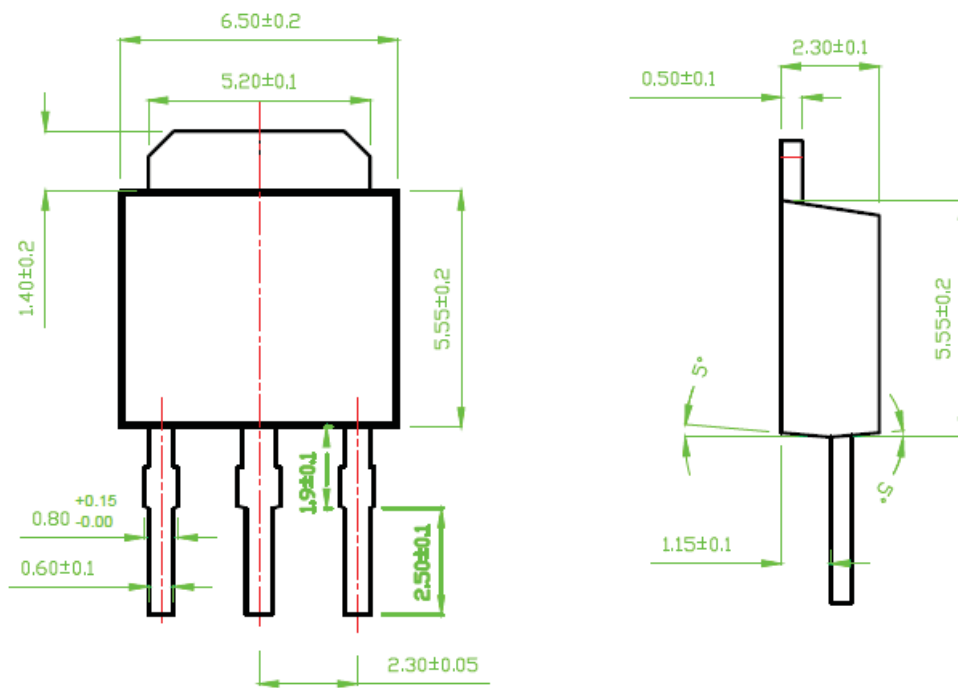
TO-251



Dimensions in Millimeters

Package Dimension

TO-251 Short Lead



Dimensions in Millimeters