

KSH13003A



KSH13003A

High Voltage Switch Mode Applications


- High Speed Switching
- Suitable for Switching Regulator and Motor Control

Absolute Maximum Ratings TC=25°C unless otherwise noted

1.5 Amperes
NPN Silicon Power Transistor
30 Watts

CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	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	30	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-65~150	°C

TO-220
1. Base
2. Collector
3. Emitter



Electrical Characteristics TC=25°C unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	$I_C=500\mu A, I_E=0$	700			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=5mA, I_B=0$	400			V
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V, I_C=0$			10	μA
*DC Current Gain	h_{FE1} h_{FE2}	$V_{CE}=2V, I_C=0.5A$ $V_{CE}=2V, I_C=1A$	9 5		35	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=0.1A$ $I_C=1A, I_B=0.25A$ $I_C=1.5A, I_B=0.5A$			0.5 1.0 3.0	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5A, I_B=0.1A$ $I_C=1A, I_B=0.25A$			1.0 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}	$V_{CC}=125V, I_C=1A$ $I_{B1}=0.2A, I_{B2}=-0.2A$ $R_L=125\Omega$			1.1	μs
Storage Time	t_{stg}				4.0	μs
Fall Time	t_F				0.7	μs

* Pulse Test: Pulse Widths $\leq 300\mu s$, Duty Cycles $\leq 2\%$

Note.

hFE1 Classification	R	9 ~ 16
	O	14 ~ 21
	Y	19 ~ 26
	G	25 ~ 35

Package Mark information.

S	S	SemiHow Symbol
YWW	Z	Y; year code, WW; week code
KSH13003A	Z	hFE1 Classification

Typical Characteristics

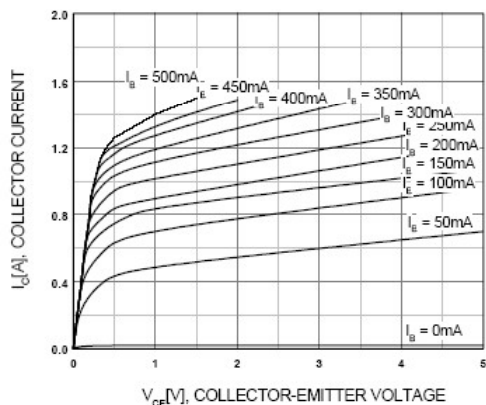


Figure 1. Static Characteristic

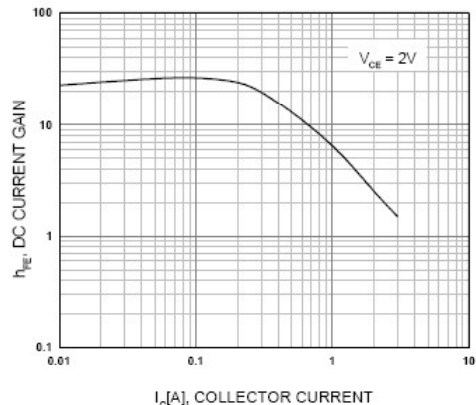


Figure 2. DC current Gain

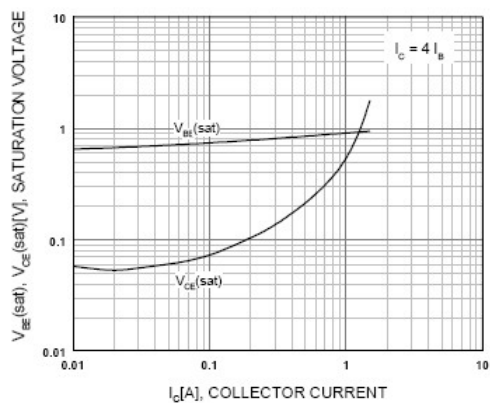


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

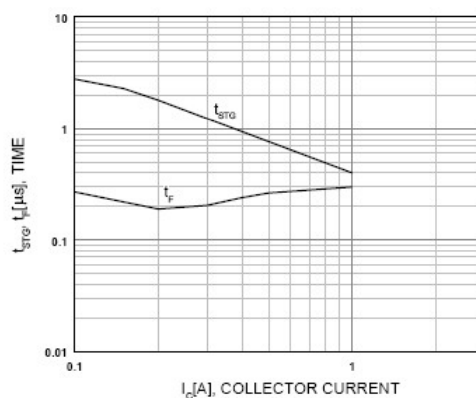


Figure 4. Switching Time

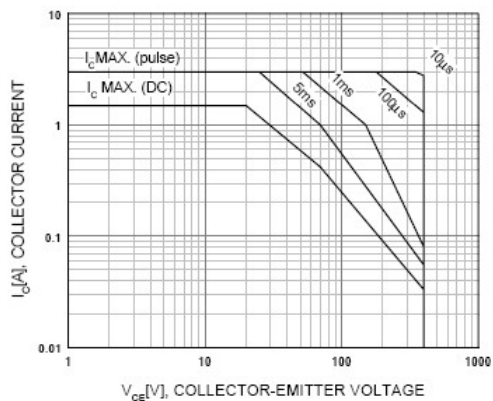


Figure 5. Safe Operating Area

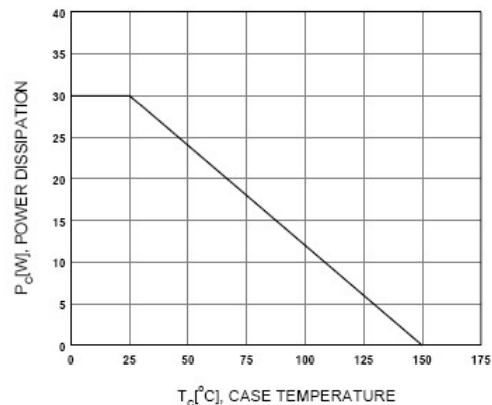
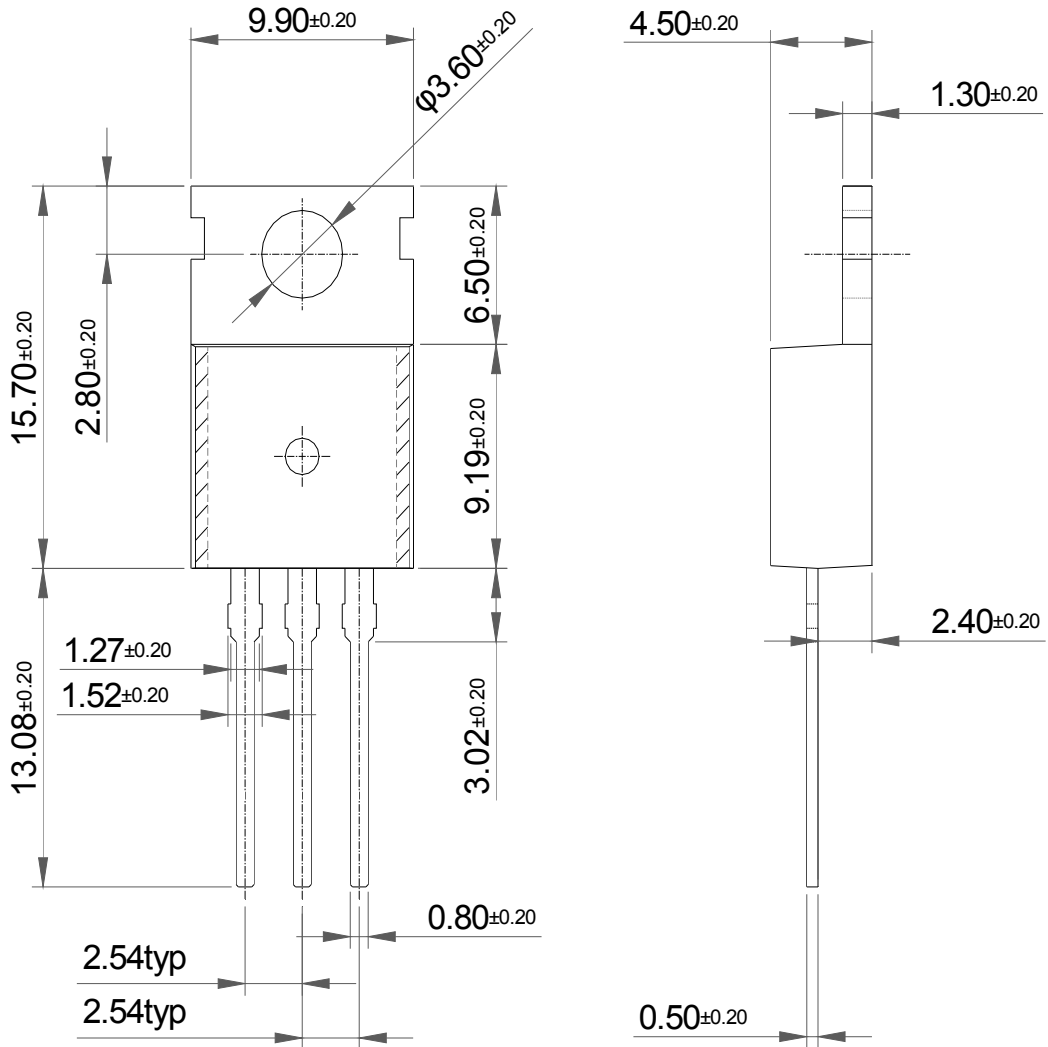


Figure 6. Power Derating

Package Dimension

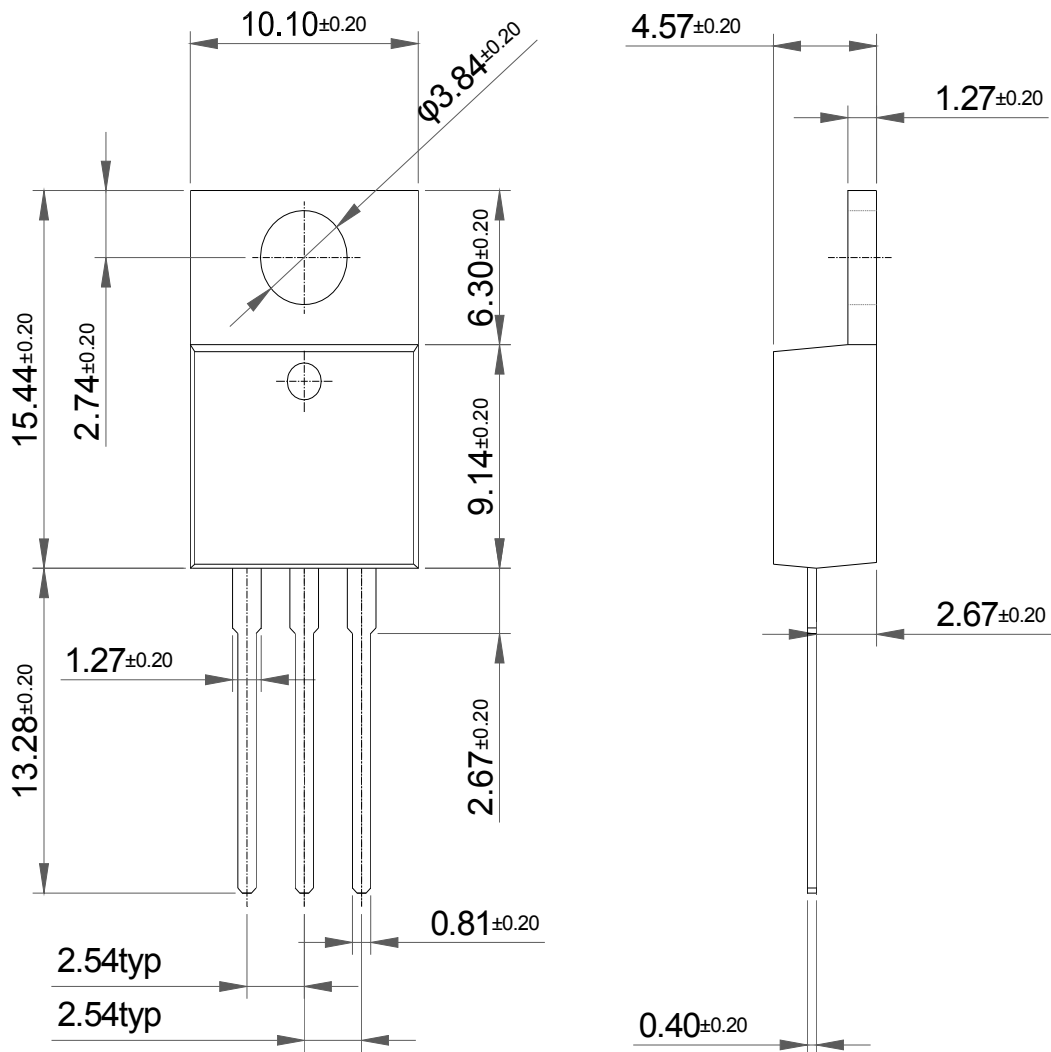
TO-220 (A)



Dimensions in Millimeters

Package Dimension

TO-220 (B)



Dimensions in Millimeters