

KSH13005A



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Switch Mode series NPN silicon Power Transistor


- High voltage, high speed power switching
- Suitable for switching regulator, inverters motor controls

Absolute Maximum Ratings TC=25°C unless otherwise noted

4 Amperes
NPN Silicon Power Transistor
75 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	4	A
Collector Current(Pulse)	I_{CP}	8	A
Base Current	I_B	2	A
Collector Dissipation(Tc=25°C)	P_C	75	W
Max. Operating 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-Emitter Breakdown Voltage	V_{CEO}	$I_C=10mA, I_B=0$	400			V
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V, I_C=0$			1	mA
*DC Current Gain	h_{FE1} h_{FE2}	$V_{CE}=5V, I_C=1A$ $V_{CE}=5V, I_C=2A$	10 8		60 40	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=0.2A$ $I_C=2A, I_B=0.5A$ $I_C=4A, I_B=1A$			0.5 0.6 1	V V V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=0.2A$ $I_C=2A, I_B=0.5A$			1.2 1.6	V V
Output Capacitance	C_{ob}	$V_{CB}=10V, f=0.1MHz$		65		pF
Current Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.5A$	4			MHz
Turn on Time	t_{on}	$V_{CC}=125V, I_C=2A$ $I_{B1}=0.4A, I_{B2}=-0.4A$ $R_L=62.5\Omega$			0.8	μs
Storage Time	t_{stg}				4.0	μs
Fall Time	t_F				0.9	μs

* Pulse Test: Pulse Width≤300 μs , Duty Cycle≤2%

Note.

hFE1 Classification	R	19 ~ 28
	O	26 ~ 35
	Y	33 ~ 40

Package Mark information.

S YWW Z KSH13005A	S	SemiHow Symbol
	YWW	Y: year code, WW; week code
	Z	hFE1 Classification

Typical Characteristics

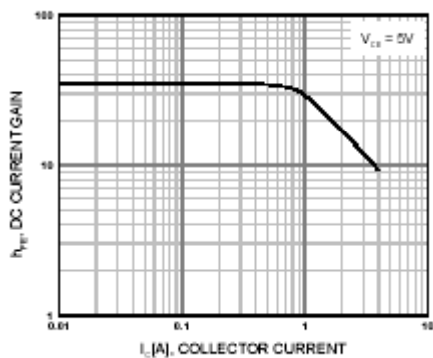


Figure 1. DC current Gain

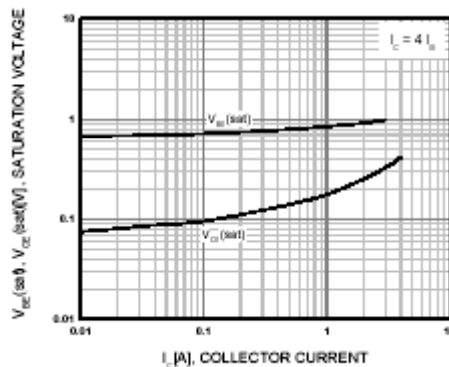


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

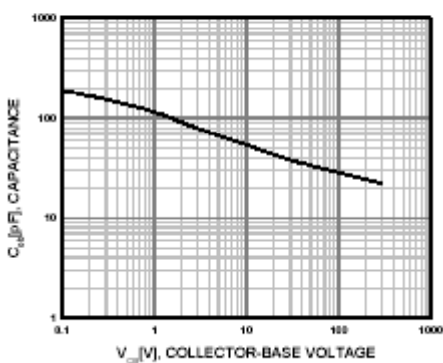


Figure 3. Collector Output Capacitance

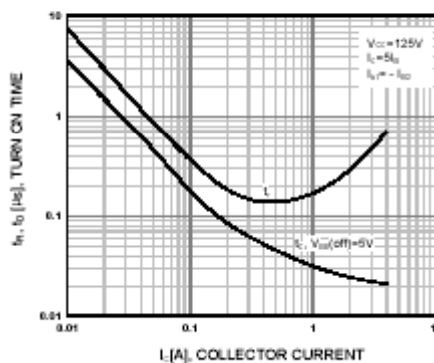


Figure 4. Turn On Time

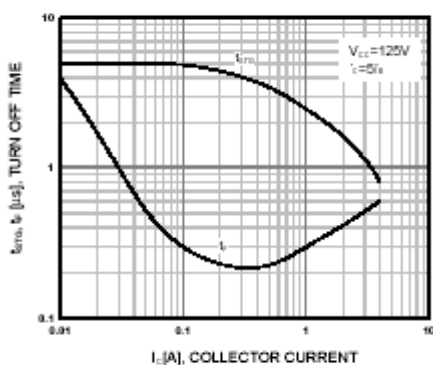


Figure 5. Turn Off Time

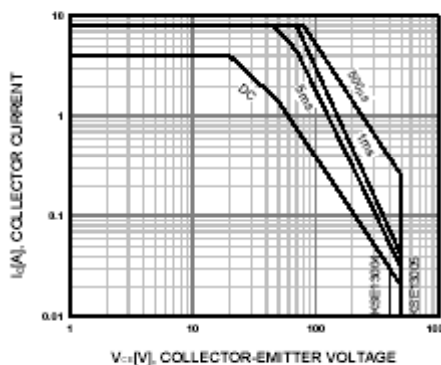
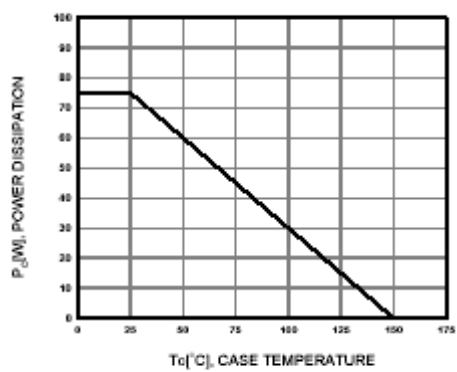
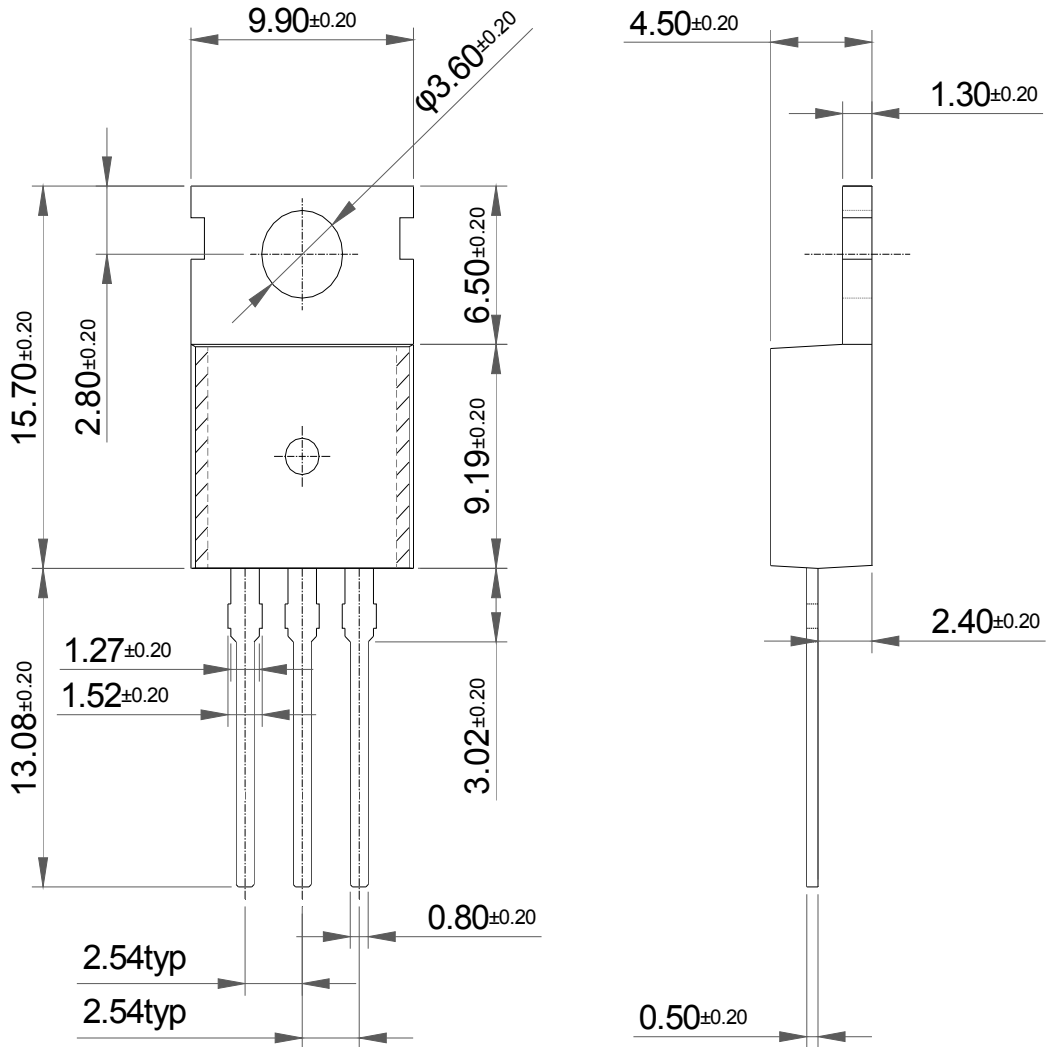


Figure 6. Safe Operating Area

Typical Characteristics (Continued)**Figure 7. Power Derating**

Package Dimension

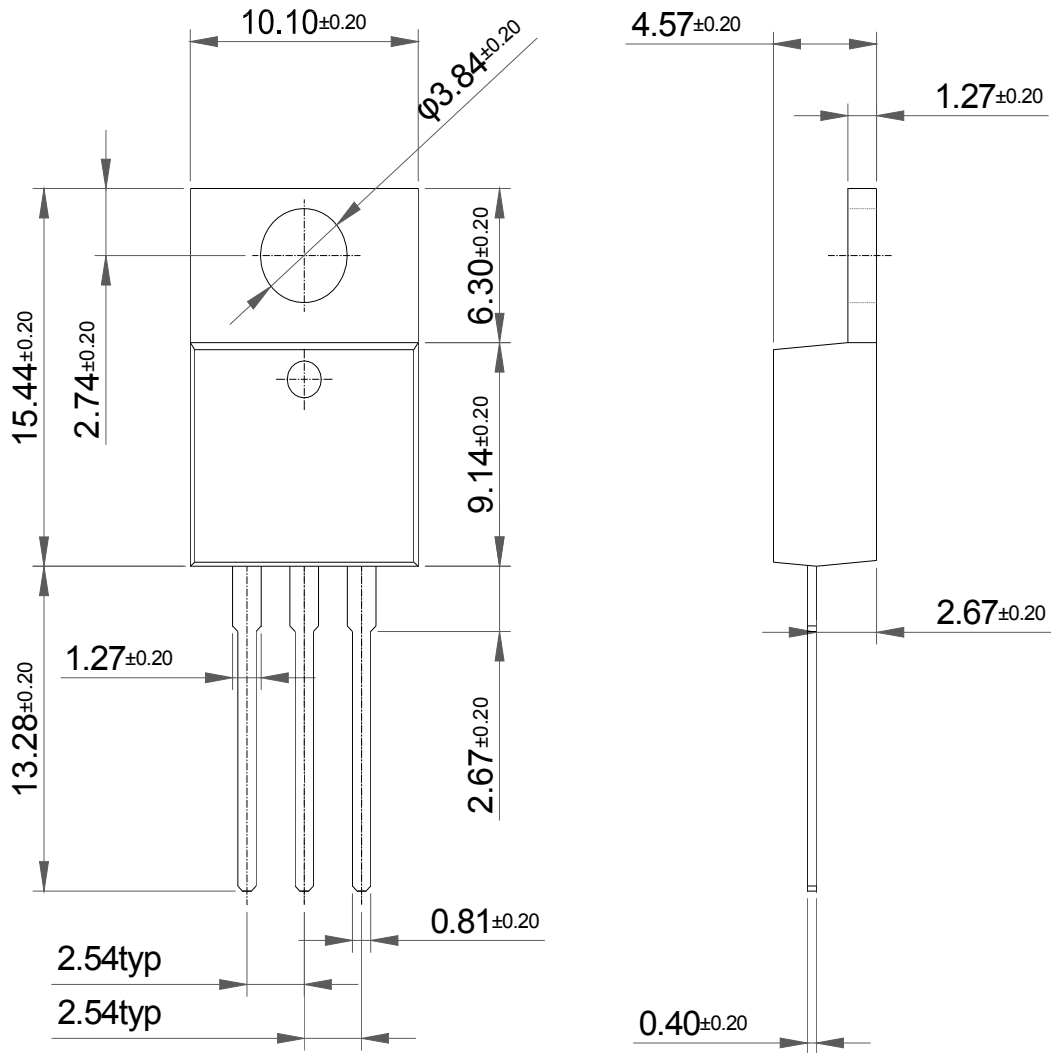
TO-220 (A)



Dimensions in Millimeters

Package Dimension

TO-220 (B)



Dimensions in Millimeters