

KSH13004A

SemiHow
Know-How for Semiconductor

KSH13004A

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}	600	V
Collector-Emitter Voltage	V_{CEO}	300	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
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}	$I_C=10mA, I_B=0$	300			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
*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
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

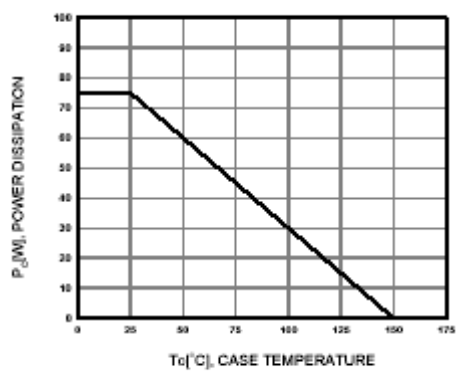
* Pulse Test: Pulse Widths≤300μs, Duty Cycles≤2%

Note.

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

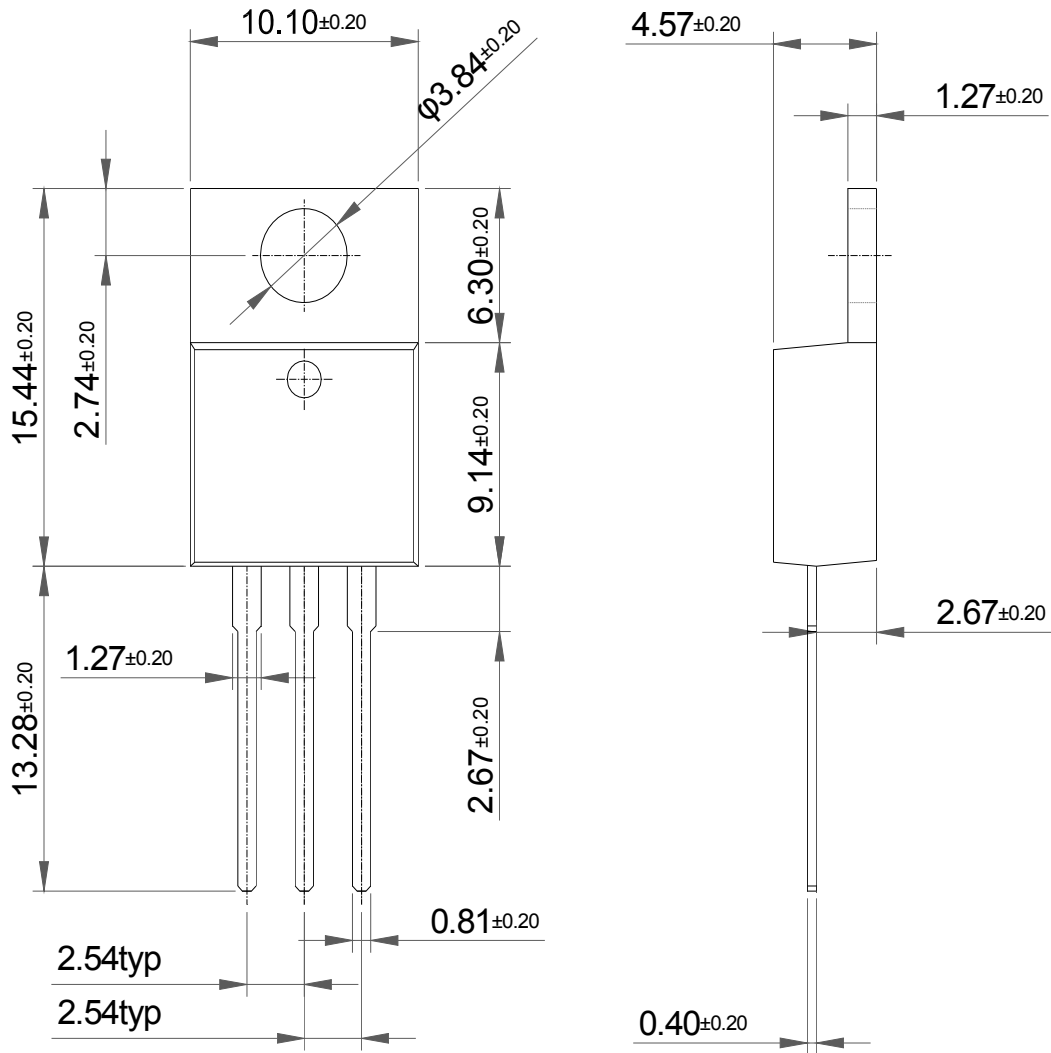
Package Mark information.

S YWW Z KSH13004A	S	SemiHow Symbol
	YWW	Y; year code, WW; week code
	Z	hFE1 Classification

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

Package Dimension

TO-220 (B)



Dimensions in Millimeters