

KSH1408F

SemiHow
Know-How for Semiconductor

KSH1408F

Switch Mode series NPN Epitaxial silicon Power Transistor

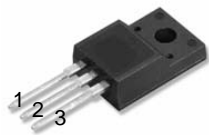
- Low voltage, high speed power switching
- Suitable for switching regulator, inverters motor controls

4 Amperes
NPN Silicon Power Transistor
25 Watts

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current(DC)	I_C	4	A
Collector Current(Pulse)	I_{CP}	8	A
Base Current	I_B	0.4	A
Collector Dissipation($T_C=25^\circ\text{C}$)	P_C	25	W
Max. Operating Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65~150	$^\circ\text{C}$

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



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

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=50\text{mA}, I_B=0$	80			V
Collector Cut-off Current	I_{CBO}	$V_{CB}=80\text{V}, I_E=0$			30	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
*DC Current Gain	h_{FE1} h_{FE2}	$V_{CE}=5\text{V}, I_C=0.5\text{A}$ $V_{CE}=5\text{V}, I_C=3\text{A}$	40 15		240	
*Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=3\text{A}, I_B=0.3\text{A}$			2	V
*Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C=3\text{A}, I_B=0.3\text{A}$			1.5	V
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		90		pF
Current Gain Bandwidth Product	f_T	$V_{CE}=5\text{V}, I_C=0.5\text{A}$		8		MHz

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

Note.

hFE1 Classification	R	40 ~ 80
	O	70 ~ 140
	Y	120 ~ 240

Package Mark information.

S YWW Z KSH1408F	S	SemiHow Symbol
	YWW	Y; year code, WW; week code
	Z	hFE1 Classification

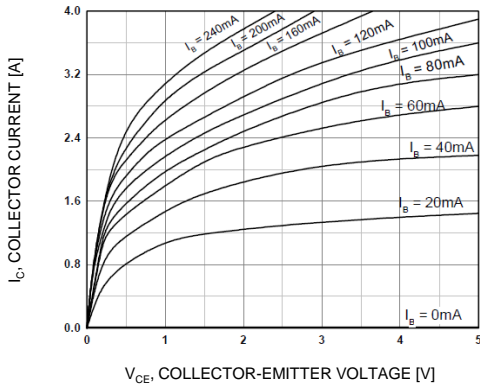


Figure 1. Static Characteristic

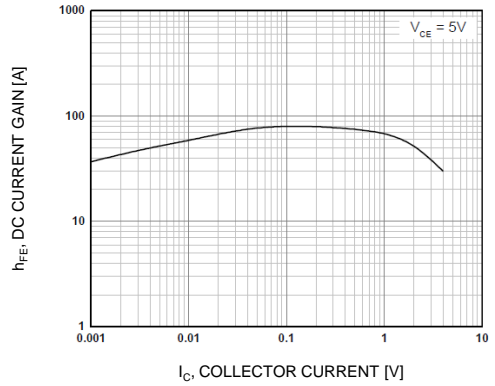


Figure 2. DC Current Gain

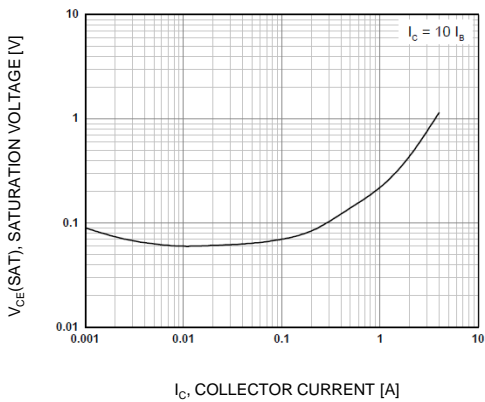


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

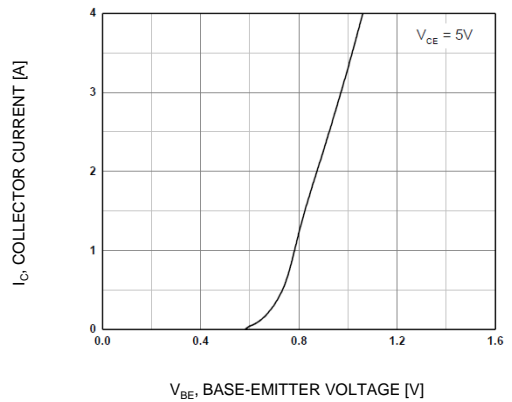


Figure 4. Collector Output Capacitance

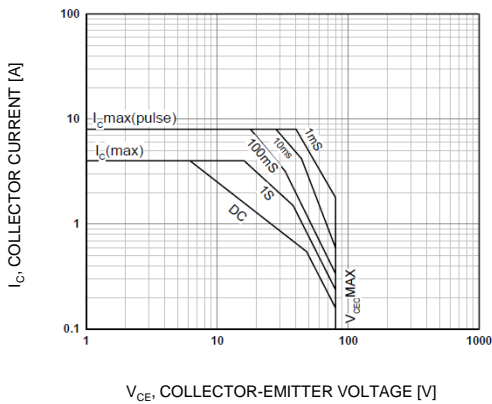


Figure 5. Safe Operating Area

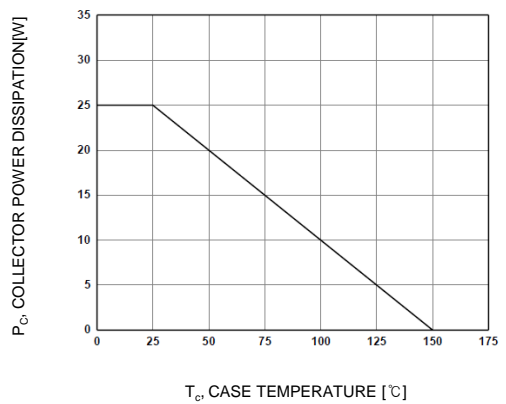


Figure 6. Power Derating

Package Dimension

TO-220F

