KSH5027AF

SemiHow
Know-How for Semiconductor

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High Voltage and High Reliability

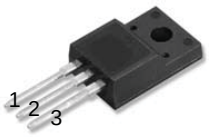
- High Speed Switching
- Wide SOA

3 Amperes
NPN Silicon Power Transistor
40 Watts

Absolute Maximum Ratings TC=25℃ unless otherwise noted

CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	1100	V
Collector-Emitter Voltage	V_{CEO}	800	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current(DC)	I_C	3	A
Collector Current(Pulse)	I_{CP}	10	A
Base Current	I_B	1.5	A
Collector Dissipation(Tc=25℃)	P_C	40	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~150	℃

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



Electrical Characteristics (1) TC=25℃ unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	I_C=1mA, I_E=0	1100			V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C=5mA, I_B=0	800			V
Emitter-Base Breakdown Voltage	V_{EBO}	I_E=1mA, I_E=0	7			V
Collector-Emitter Sustaining Voltage	I_{CEX}(sus)	I_C=1.5A, I_{B1}=-I_{B2}=0.3A L=2mH, Clamped	800			V
Collector Cut0off Current	I_{CBO}	V_{CB}=800V,I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V,I_C=0			10	μA
DC Current Gain	h_{FE1} h_{FE2}	V_{CE}=5V,I_C=0.2A V_{CE}=5V,I_C=1A	10 8		40	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=1.5A,I_B=0.3A			2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=1.5A,I_B=0.3A			1.5	V
Output Capacitance	C_{ob}	V_{CB}=10V,I_E=0, f=0.1MHz		60		pF
Current Gain Bandwidth Product	f_T	V_{CE}=10V,I_C=0.2A		15		MHz
Turn on Time	t_{on}	Vcc=400V, Ic=5A I_{B1}=-2.5A, I_{B2}=2A R_L=200Ω (Note 2)			0.5	μs
Storage Time	t_{stg}				3.0	μs
Fall Time	t_f				0.3	μs

Notes ;

1. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%
2. Final Test Condition : UI9600, Vcc=5V, Ic=0.5A (t_{stg} Class = A : 3.0~4.0, B : 4.0~5.0, C : 5.0~6.0)

hFE1 Classification	R	15 ~ 30
	O	20 ~ 40

S **YWW Z** **KSH5027A**	S	SemiHow Symbol
	YWW	Y; year code, WW; week code
	Z	hFE1 Classification

Typical Characteristics

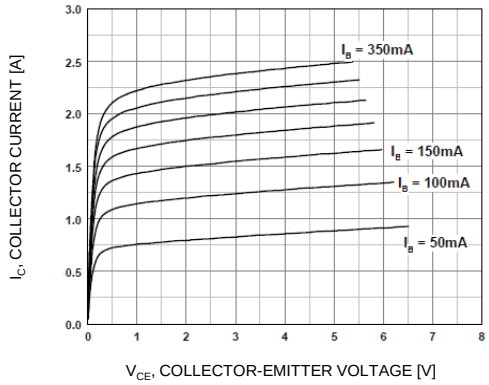


Figure 1. Static Characteristic

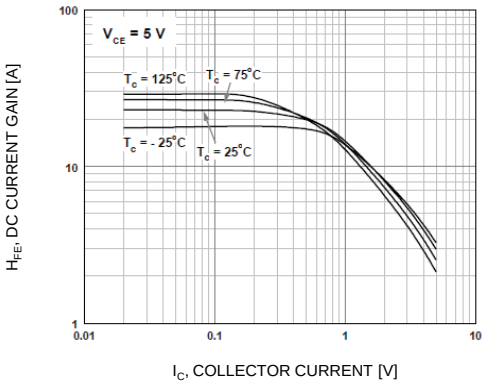


Figure 2. DC Current Gain

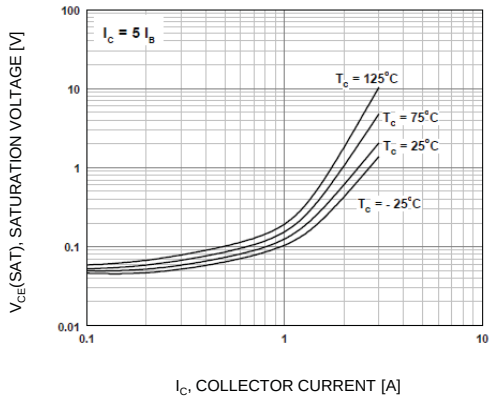


Figure 3. Collector-Emitter Saturation Voltage

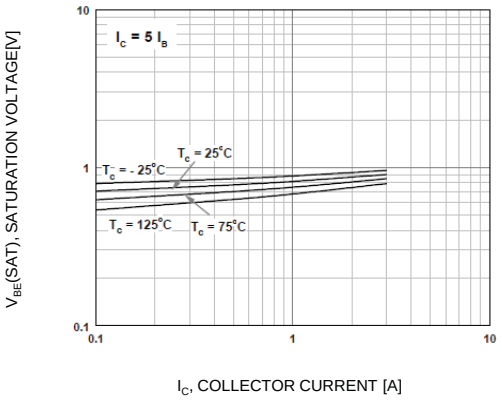


Figure 4. Base-Emitter Saturation Voltage

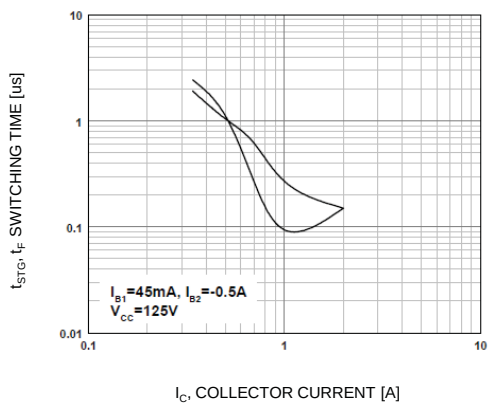


Figure 5. Resistive Load Switching Time

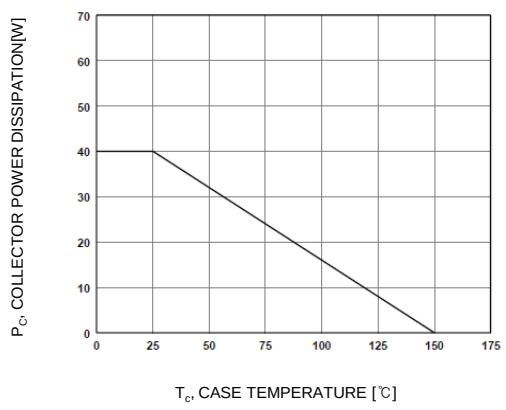


Figure 6. Power Derating

Typical Characteristics (Continued)

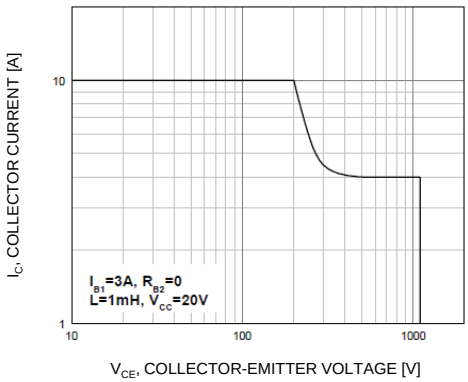


Figure 7. Reverse Biased Safe Operating Area

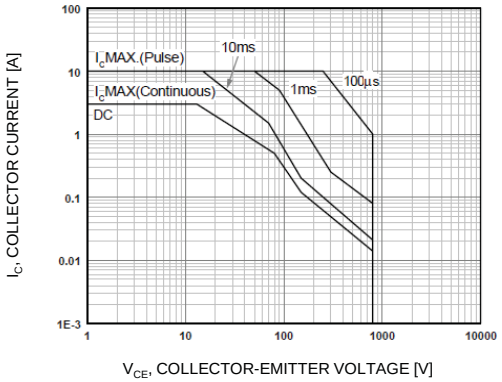
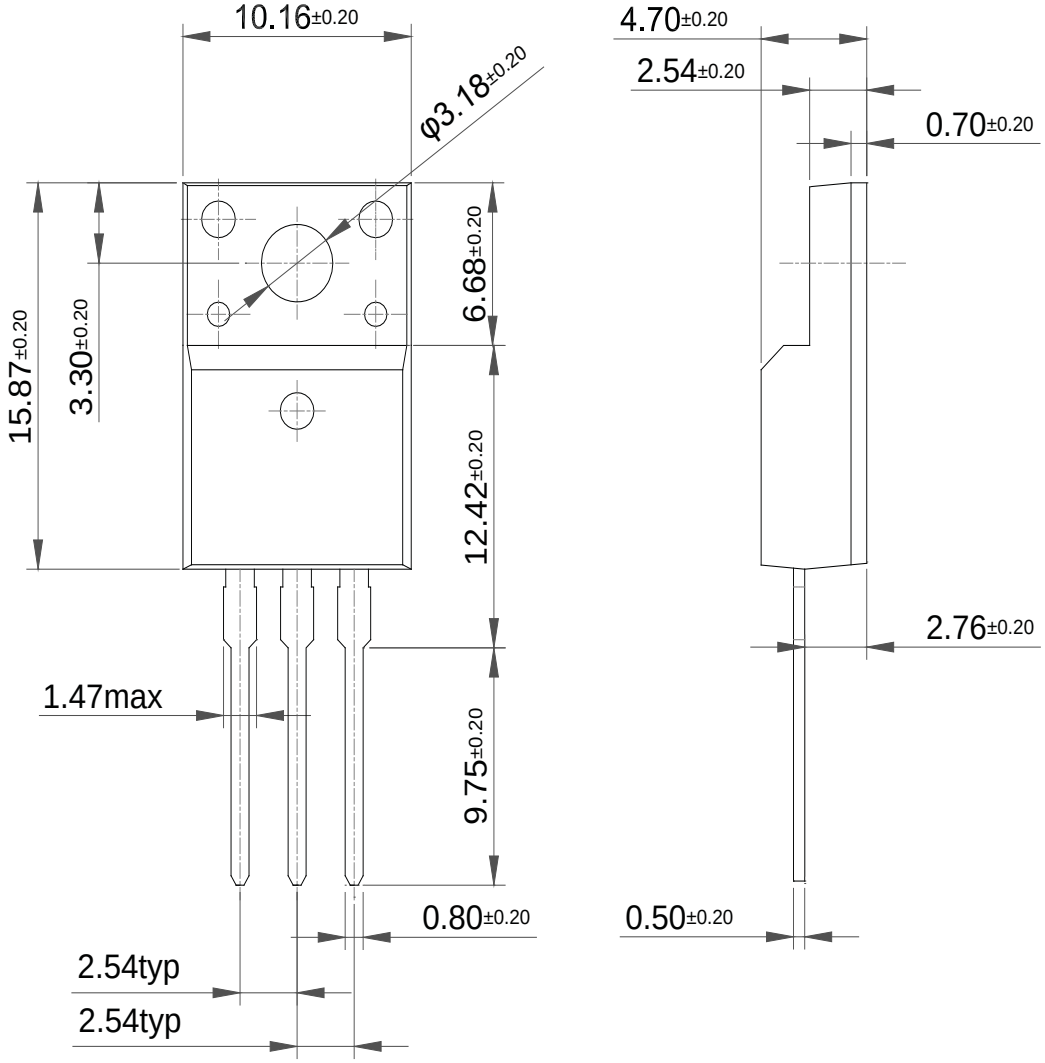


Figure 8. Forward Bias Safe Operating Area

Package Dimension

TO-220F



Dimensions in Millimeters