KSD13003E
KSU13003E

SemiHow
Know-How for Semiconductor

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KSD13003E/KSU13003E

High Voltage Switch Mode Application

- High Voltage, High Speed Switching
- Suitable for Switching regulator, Inverters motor controls
- 150℃ Max. Operating temperature
- 8KV ESD proof at HBM (C=100pF, R=1.5kΩ)

1.5 Amperes
NPN Silicon Power Transistor
25 Watts

TO-252 / TO-251
1. Base
2. Collector
3. Emitter

D-PAK **I-PAK**

KSD13003E **KSU13003E**

Absolute Maximum Ratings TC=25℃ unless otherwise noted

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℃)	P_C	25	W
Storage Temperature	T_{STG}	-65~150	℃
Max. Operating Junction Temperature	T_J	150	℃

Electrical Characteristics TC=25℃ unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	I_C=500μA, I_E=0	700			V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C=1mA, 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}=10V,I_C=400mA V_{CE}=10V,I_C=1.5A	9 3		38	
*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 V 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 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}	Vcc=125V, Ic=2A I_{B1}=0.2A, I_{B2}= -0.2A R_L=125Ω			1.1	μs
Storage Time	t_{stg}				4.0	μs
Fall Time	t_F				0.7	μs

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

Note.

hFE1 Classification	R	15 ~ 25
	O	20 ~ 30
	Y	25 ~ 35

Package Mark information.

S E **13003** **YWW Z**	S	SemiHow Symbol
	YWW	Y; year code, WW; week code
	Z	hFE1 Classification

Typical Characteristics

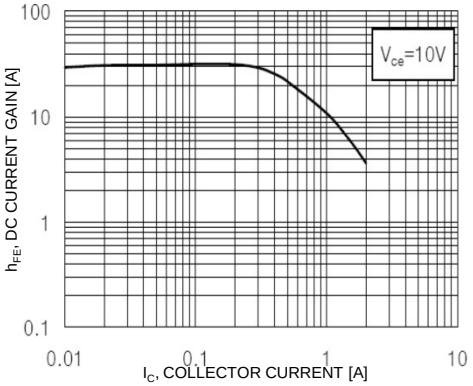


Figure 1. DC Current Gain

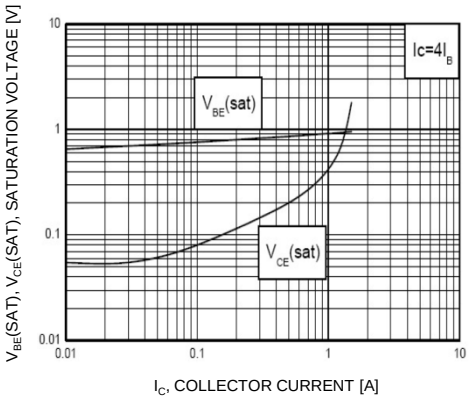


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

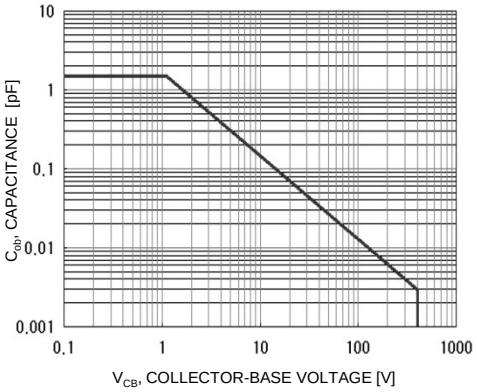


Figure 3. Forward Biased Safe Operating Area

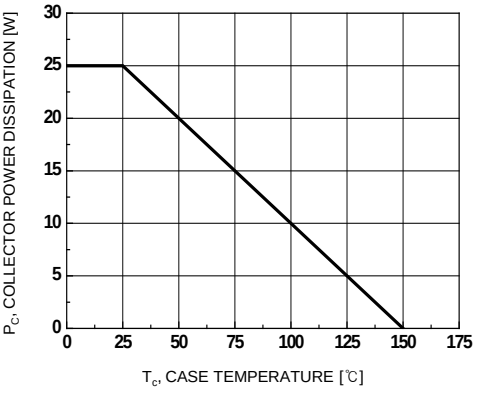
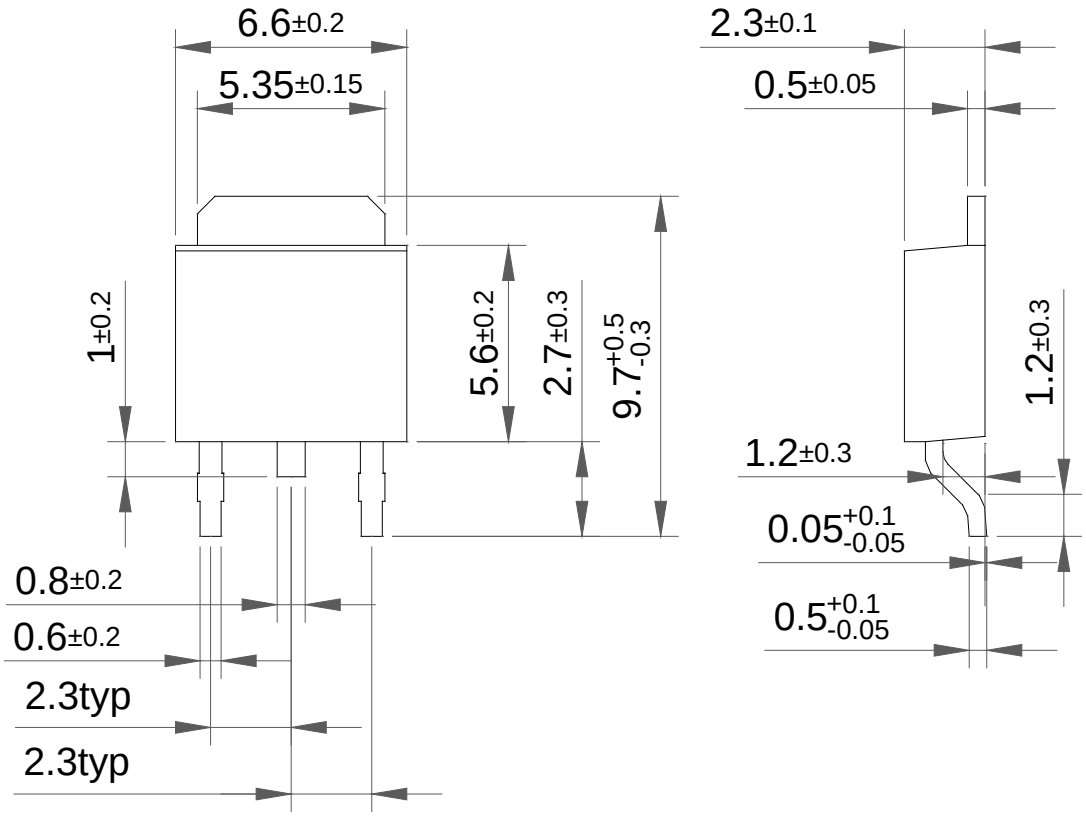


Figure 4. Power Derating

Package Dimension

TO-252



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