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April 2015

KSH44H11 / KSH44H11I
NPN Epitaxial Silicon Transistor

Features

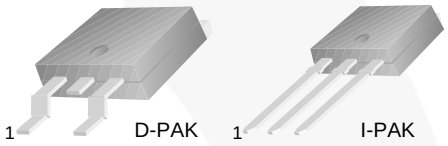
- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, “- I” Suffix)
- Electrically Similar to Popular KSE44H
- Fast Switching Speeds
- Low Collector-Emitter Saturation Voltage

Applications

- Switching Regulators
- Converters
- Power Amplifiers

Description

Designed for general-purpose power and switching, such as output or driver stages in applications.



1.Base 2.Collector 3.Emitter

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSH44H11TF	KSH44H11	TO-252 3L (DPAK)	Tape and Reel
KSH44H11TM	KSH44H11	TO-252 3L (DPAK)	Tape and Reel
KSH44H11ITU	KSH44H11-I	TO-251 3L (IPAK)	Rail

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	8	A
I_{CP}	Collector Current (Pulse)	16	A
P_C	Collector Dissipation (T_C = 25°C)	20.00	W
	Collector Dissipation (T_A = 25°C)	1.75	
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 to +150	°C

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Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage[1]	I_C = 30 mA, I_B = 0	80			V
I_{CEO}	Collector Cut-Off Current	V_{CE} = 80 V, I_B = 0			10	µA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 5 V, I_C = 0			50	µA
h_{FE}	DC Current Gain	V_{CE} = 1 V, I_C = 2 A	60			
		V_{CE} = 1 V, I_C = 4 A	40			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 8 A, I_B = 0.4 A			1	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 8 A, I_B = 0.8 A			1.5	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10 V, I_C = 0.5 A		50		MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, f = 1 MHz		130		pF
t_{ON}	Turn-On Time	I_C = 5 A, I_{B1} = - I_{B2} = 0.5 A		300		ns
t_{STG}	Storage Time			500		ns
t_F	Fall Time			140		ns

Note:

1. Pulse test: pulse width ≤ 300 µs, duty cycle ≤ 2%.

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Typical Performance Characteristics

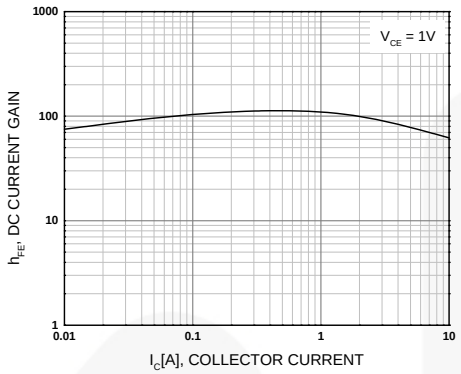

Figure 1. DC Current Gain

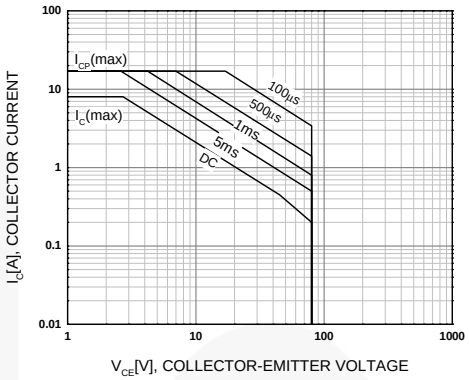

Figure 2. Safe Operating Area

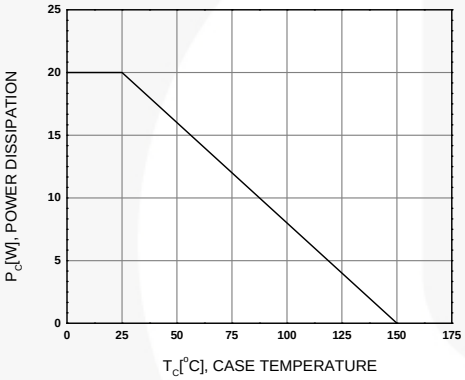

Figure 3. Power Derating

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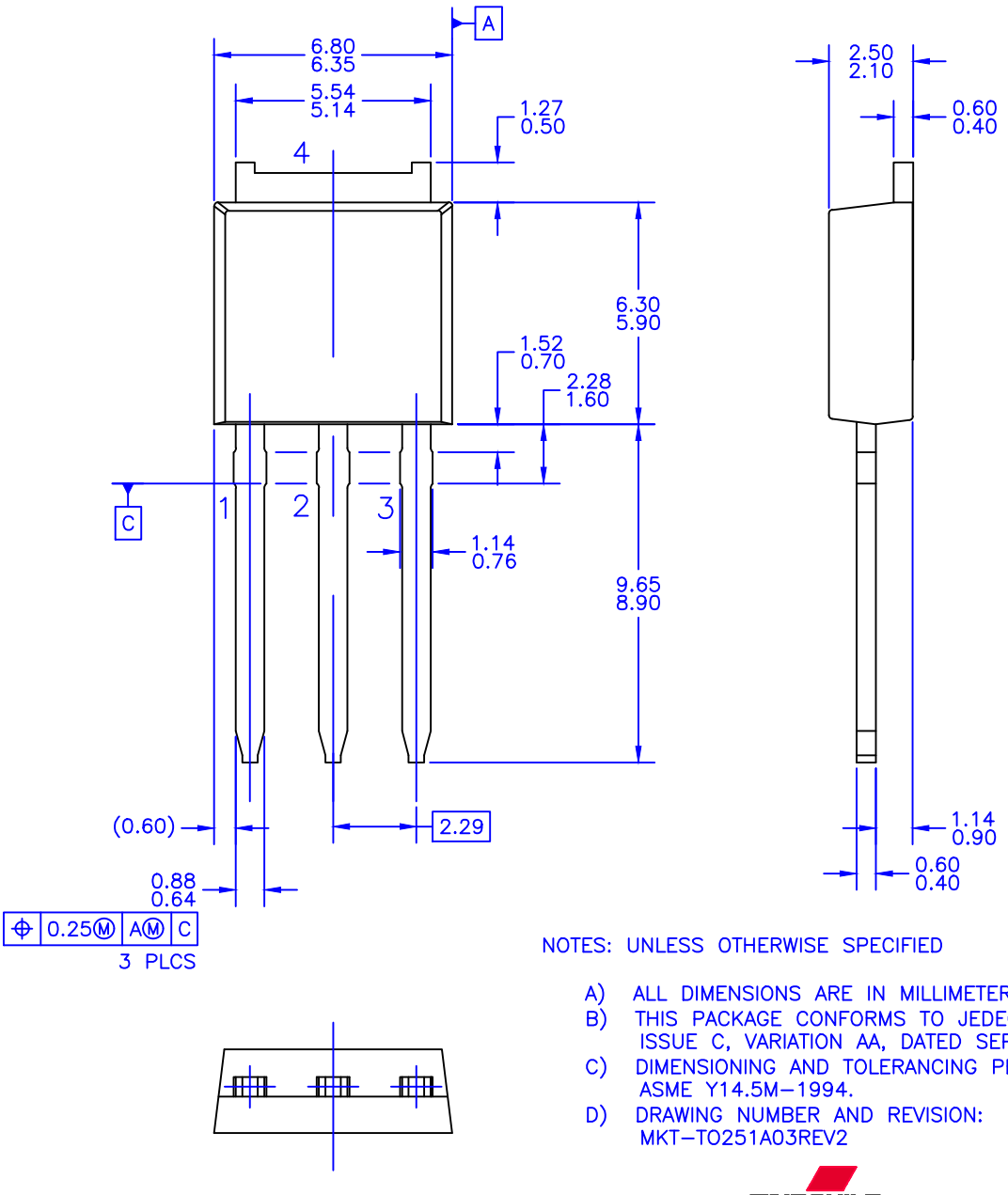

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C) DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
D) DRAWING NUMBER AND REVISION: MKT-TO251A03REV2

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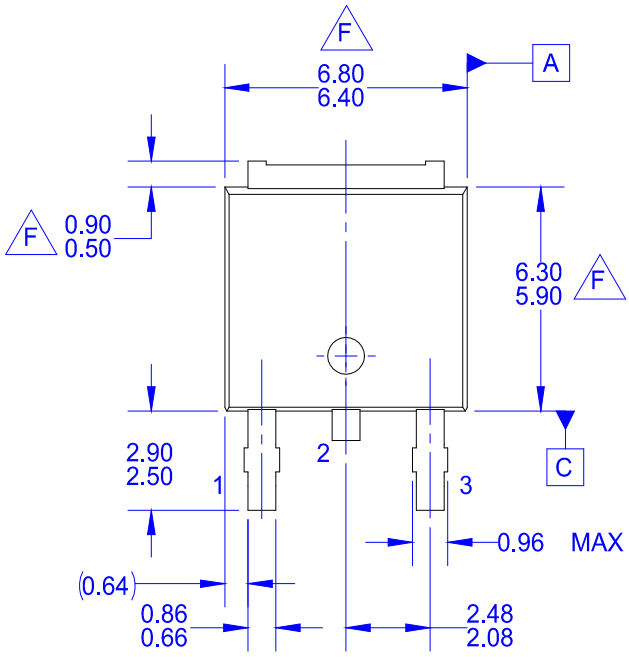
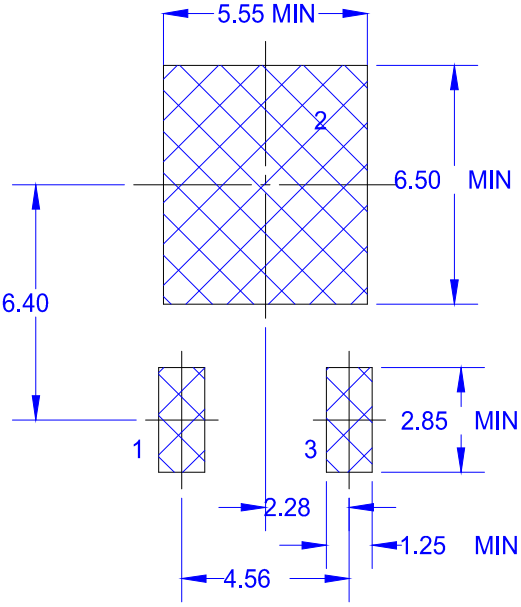
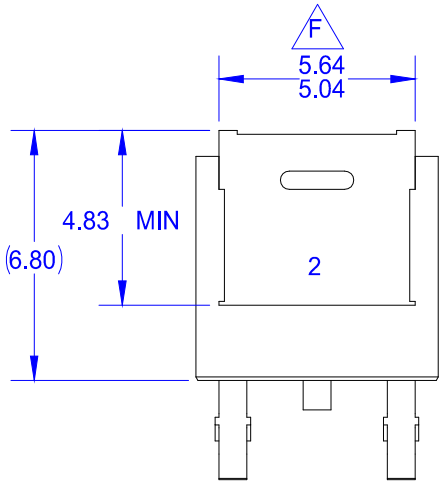
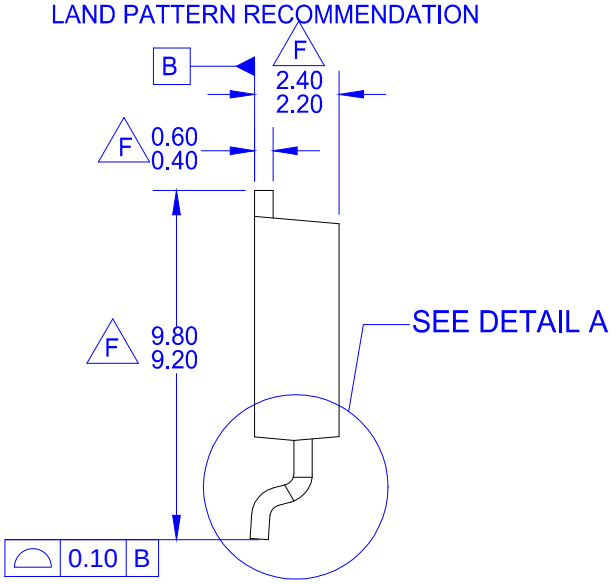
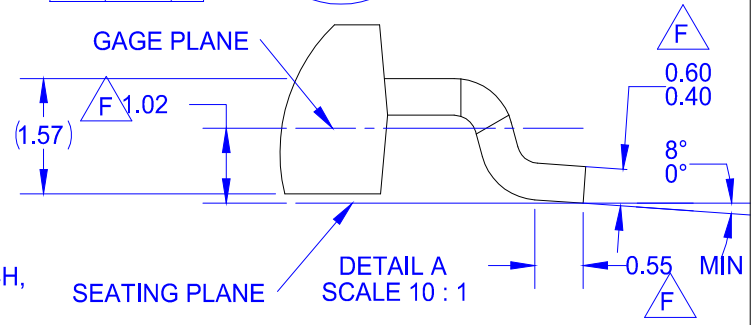




LAND PATTERN RECOMMENDATION







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