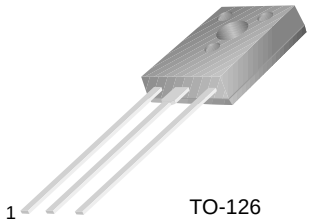
FAIRCHILD
SEMICONDUCTOR®

KSE13003

High Voltage Switch Mode Applications

- High Speed Switching
- Suitable for Switching Regulator and Motor Control



TO-126

1. Emitter 2.Collector 3.Base

NPN Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	1.5	A
I_{CP}	Collector Current (Pulse)	3	A
I_B	Base Current	0.75	A
P_C	Collector Dissipation (T_C=25°C)	20	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 5mA, I_B = 0	400			V
I_{EBO}	Emitter Cut-off Current	V_{EB} = 9V, I_C = 0			10	µA
h_{FE}	*DC Current Gain	V_{CE} = 2V, I_C = 0.5A V_{CE} = 2V, I_C =1A	8 5		40	
V_{CE}(sat)	*Collector Emitter Saturation Voltage	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 3	V V V
V_{BE}(sat)	*Base Emitter Saturation Voltage	I_C = 0.5A, I_B = 0.1A I_C = 1A, I_B = 0.25A			1 1.2	V V
C_{ob}	Output Capacitance	V_{CB} = 10V , f = 0.1MHz		21		pF
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.1A	4			MHz
t_{ON}	Turn On Time	V_{CC} =125V, I_C = 1A I_{B1} = 0.2A, I_{B2} = - 0.2A R_L = 125Ω			1.1	µs
t_{STG}	Storage Time				4.0	µs
t_F	Fall Time				0.7	µs

* Pulse Test: Pulse Width=5ms, Duty Cycle≤10%

Typical Characteristics

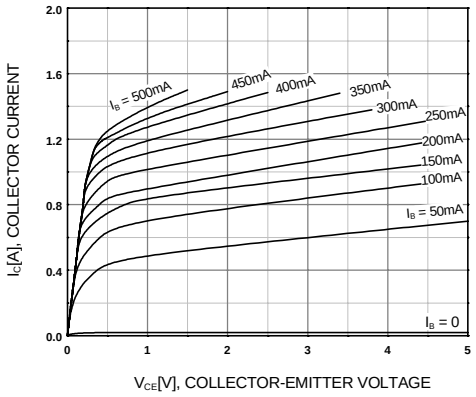


Figure 1. Static Characteristic

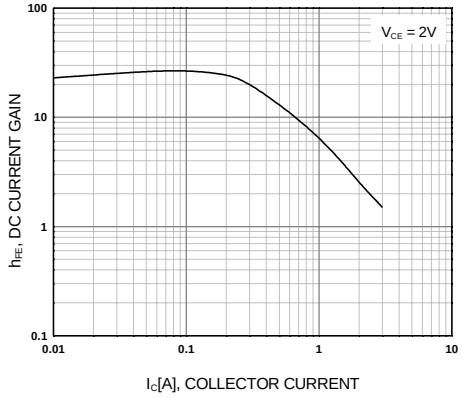


Figure 2. DC current Gain

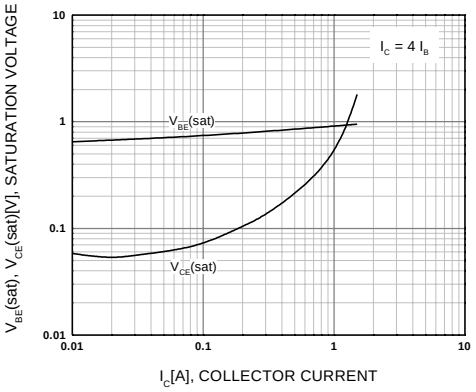


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

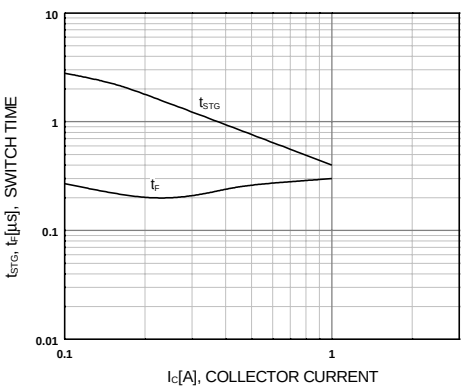


Figure 4. Switching Time

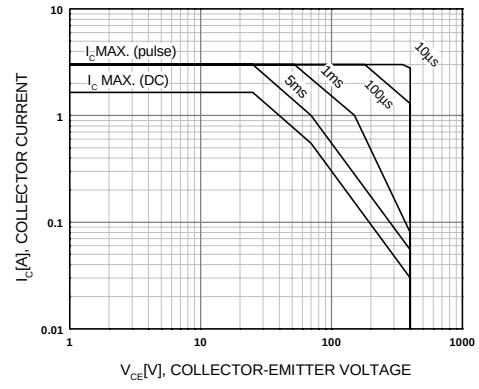


Figure 5. Safe Operating Area

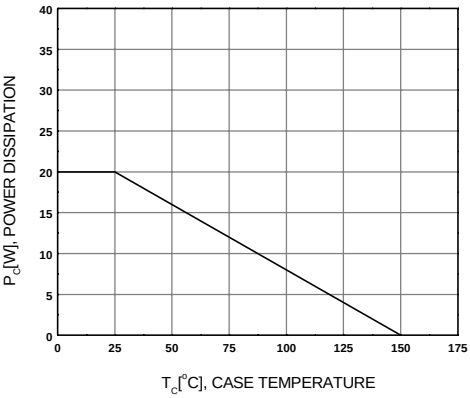
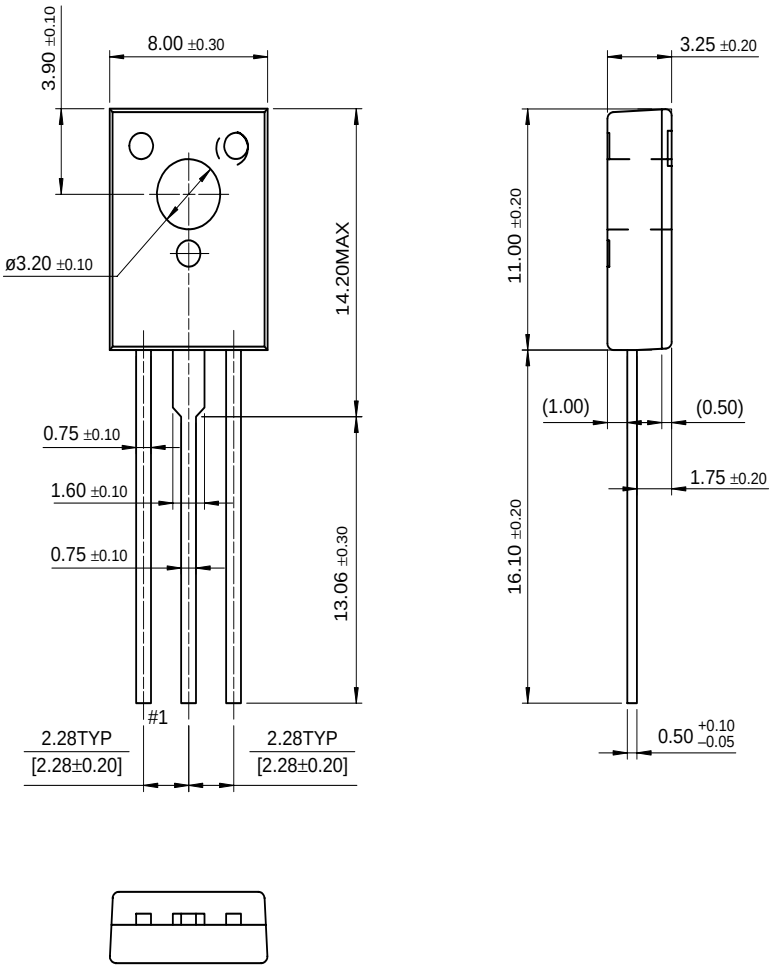


Figure 6. Power Derating

Package Demensions

TO-126



Dimensions in Millimeters

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Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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Features

- High Speed Switching
- Suitable for Switching Regulator and Motor Control

back to top

Applications

High Voltage Switch Mode

back to top

Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
KSE13003ASTU	Full Production	$0.221	TO-126	3	RAIL
KSE13003TATU	Full Production	$0.35	TO-220	3	RAIL
KSE13003TH1ATU	Full Production	$0.35	TO-220	3	RAIL
KSE13003AS	Full Production	$0.221	TO-126	3	BULK
KSE13003H1ASTU	Full Production	$0.221	TO-126	3	RAIL
KSE13003H2ASTU	Full Production	$0.221	TO-126	3	RAIL
KSE13003TH2ATU	Full Production	$0.35	TO-220	3	RAIL
KSE13003TH2A	Full Production	$0.35	TO-220	3	BULK
KSE13003TH1A	Full Production	$0.35	TO-220	3	BULK

* 1,000 piece Budgetary Pricing

back to top