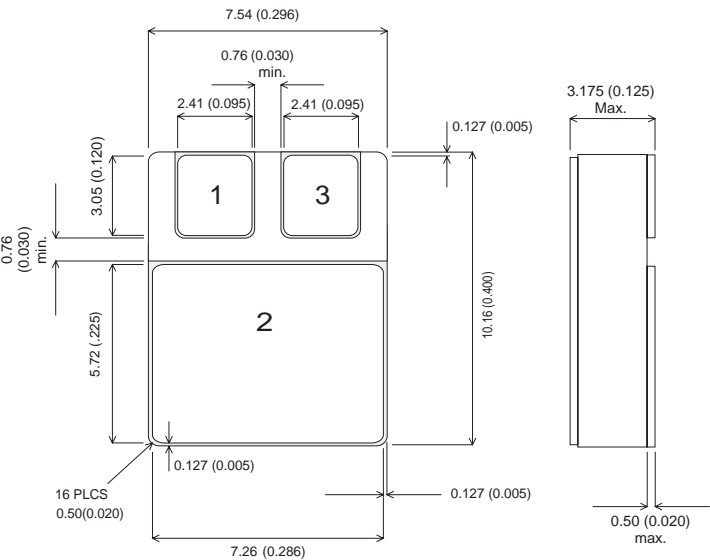


MECHANICAL DATA

Dimensions in mm (inches)

SILICON POWER NPN DARLINGTON TRANSISTOR



FEATURES

- High Gain Darlington Performance

APPLICATIONS

- Audio Amplifiers
- Hammer Drivers
- Shunt and Series Regulators

SMD05 (TO-276AA)

Pad 1 – Base Pad 2 – Collector Pad 3 – Emitter

ABSOLUTE MAXIMUM RATINGS(T_{case} = 25°C unless otherwise stated)

V _{CEO}	Collector – Emitter Voltage	80V
V _{CEX}	Collector – Emitter Voltage	80V
V _{CBO}	Collector – Base Voltage	80V
V _{EBO}	Emitter – Base Voltage	5V
I _C	Continuous Collector Current	10A
I _{CM}	Peak Collector Current	15A
I _B	Base Current - Continuous	0.25A
P _{tot}	Total Dissipation at T _{case} = 25°C	100W
	Derate above 25°C	0.571W/°C
T _{STG} , T _J	Operating and Storage Junction Temperature Range(2)	–65 to +200°C

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS							
V _{CEO(BR)*}	Collector – Emitter Breakdown Voltage	I _C = 200mA	I _B = 0	80			V
I _{CEO}	Collector Cut-off Current	V _{CE} = 80V	I _B = 0			1.0	mA
I _{CEV}	Collector Cut-off Current	V _{CE} = V _{CEO(BR)}	V _{BE(off)} = 1.5V			0.3	mA
			T _C = 150°C			3.0	
I _{EBO}	Emitter Cut-off Current	V _{EB} = 5V	I _C = 0			10	mA
V _{CER(BR)}	Collector–Emitter Breakdown Voltage*	R _{EB} =100Ω	I _C = 200mA			80	V
V _{CEV(BR)}	Collector–Emitter Breakdown Voltage*	V _{BE(off)} = 1.5V	I _C = 200mA			80	
ON CHARACTERISTICS							
h _{FE}	DC Current Gain	V _{CE} = 3V	I _C = 5A	1000		20000	—
		V _{CE} = 3V	I _C = 10A	100			
V _{CE(sat)}	Collector – Emitter Saturation Voltage	I _C = 5A	I _B = 0.01A			2.0	V
		I _C = 10A	I _B = 0.1A			3.0	
V _{BE(on)}	Base – Emitter On Voltage	V _{CE} = 3V	I _C = 5A			2.8	V
		V _{CE} = 3V	I _C = 10A			4.5	
V _F	Diode Forward Voltage	I _F = 10A				4.0	V
DYNAMIC CHARACTERISTICS							
C _{ob}	Output Capacitance	V _{CB} =10V	I _E = 0 f _{test} = 1.0MHz			200	pF
h _{fe}	*Magnitude of Common Emitter Small Signal Short-Circuit	V _{CE} = 5V	I _C = 1.0A f = 1.0KHz	20			—
h _{fe}	Common Emitter Small Signal Short-Circuit Forward	V _{CE} = 5V	I _C = 1.0A f = 1.0KHz	1000			—
SECOND BREAKDOWN							
E _{s/b}	Energy with Base-Reverse Biased	L =12mH V _{BE(off)} = 1.5V	R _{BE} = 100Ω I _C = 4.5A	120			mJ

* Pulse test $t_p = 300\mu s$, Duty Cycle $\leq 2\%$