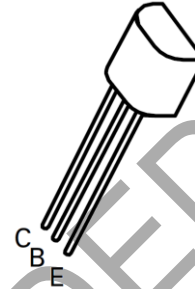


Features

- 100 Volt V_{CE0}
- 4 Amps Continuous Current
- Up to 10 Amps Peak Current
- Very Low Saturation Voltage
- $P_{tot} = 1.2$ Watts
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/contact-us) or your local Diodes representative.**
<https://www.diodes.com/quality/product-definitions/>

Pin Assignments

E-Line (TO92 Compatible)



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	200	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6	V
Peak Pulse Current	I_{CM}	10	A
Continuous Collector Current	I_C	4	A
Practical Power Dissipation (Note 1)	P_{totp}	1.58	W
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	1.2	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 200	$^\circ\text{C}$

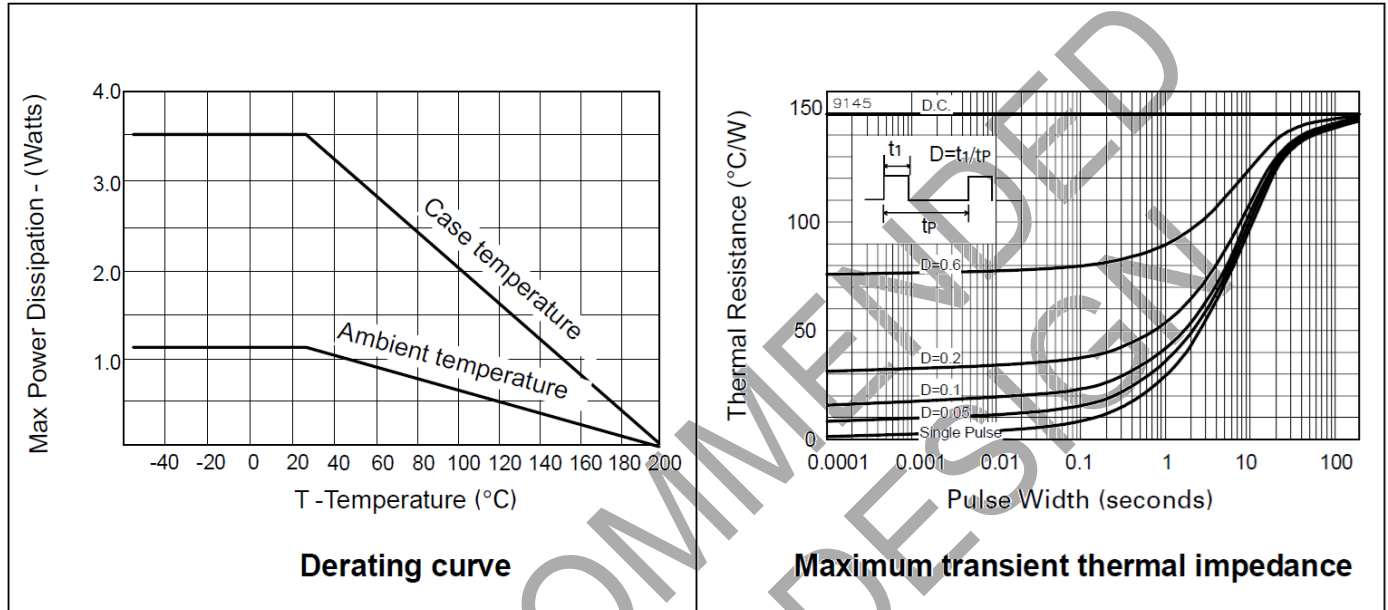
Electrical Characteristics (@ $T_{amb} = +25^\circ\text{C}$, unless otherwise stated.)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	200	300	—	V	$I_C = 100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	200	300	—	V	$I_C = 1\mu\text{A}, R_B \leq 1\text{k}\Omega$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	100	120	—	V	$I_C = 10\text{mA}$ (Note 2)
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	8	—	V	$I_E = 100\mu\text{A}$
Collector Cutoff Current	I_{CBO}	—	—	50 1	nA μA	$V_{CB} = 150\text{V}$ $V_{CB} = 150\text{V}, T_{amb} = 100^\circ\text{C}$
Collector Cutoff Current	I_{CER} $R \leq 1\text{k}\Omega$	—	—	50 1	nA μA	$V_{CB} = 150\text{V}$ $V_{CB} = 150\text{V}, T_{amb} = 100^\circ\text{C}$
Emitter Cutoff Current	I_{EBO}	—	—	10	nA	$V_{EB} = 6\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	14 100 160	50 150 200	mV	$I_C = 0.1\text{A}, I_B = 5\text{mA}$ $I_C = 2\text{A}, I_B = 100\text{mA}$ $I_C = 4\text{A}, I_B = 400\text{mA}$ (Note 2)
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	960	1100	mV	$I_C = 4\text{A}, I_B = 400\text{mA}$ (Note 2)
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	—	830	950	V	$I_C = 4\text{A}, V_{CE} = 2\text{V}$ (Note 2)
Static Forward Current Transfer Ratio	h_{FE}	100 100 50 20	200 200 100 30	— 300 — —	—	$I_C = 10\text{mA}, V_{CE} = 2\text{V}$ $I_C = 2\text{A}, V_{CE} = 2\text{V}$ (Note 2) $I_C = 4\text{A}, V_{CE} = 2\text{V}$ (Note 2) $I_C = 10\text{A}, V_{CE} = 2\text{V}$ (Note 2)
Transition Frequency	f_T	—	130	—	MHz	$I_C = 100\text{mA}, V_{CE} = 10\text{V}$ $f = 50\text{MHz}$
Output Capacitance	C_{obo}	—	35	—	pF	$V_{CB} = 10\text{V}, f = 1\text{MHz}$
Switching Times	t_{on} t_{off}	— —	50 1650	— —	ns	$I_C = 1\text{A}, I_{B1} = 100\text{mA}$ $I_{B2} = 100\text{mA}, V_{CC} = 10\text{V}$

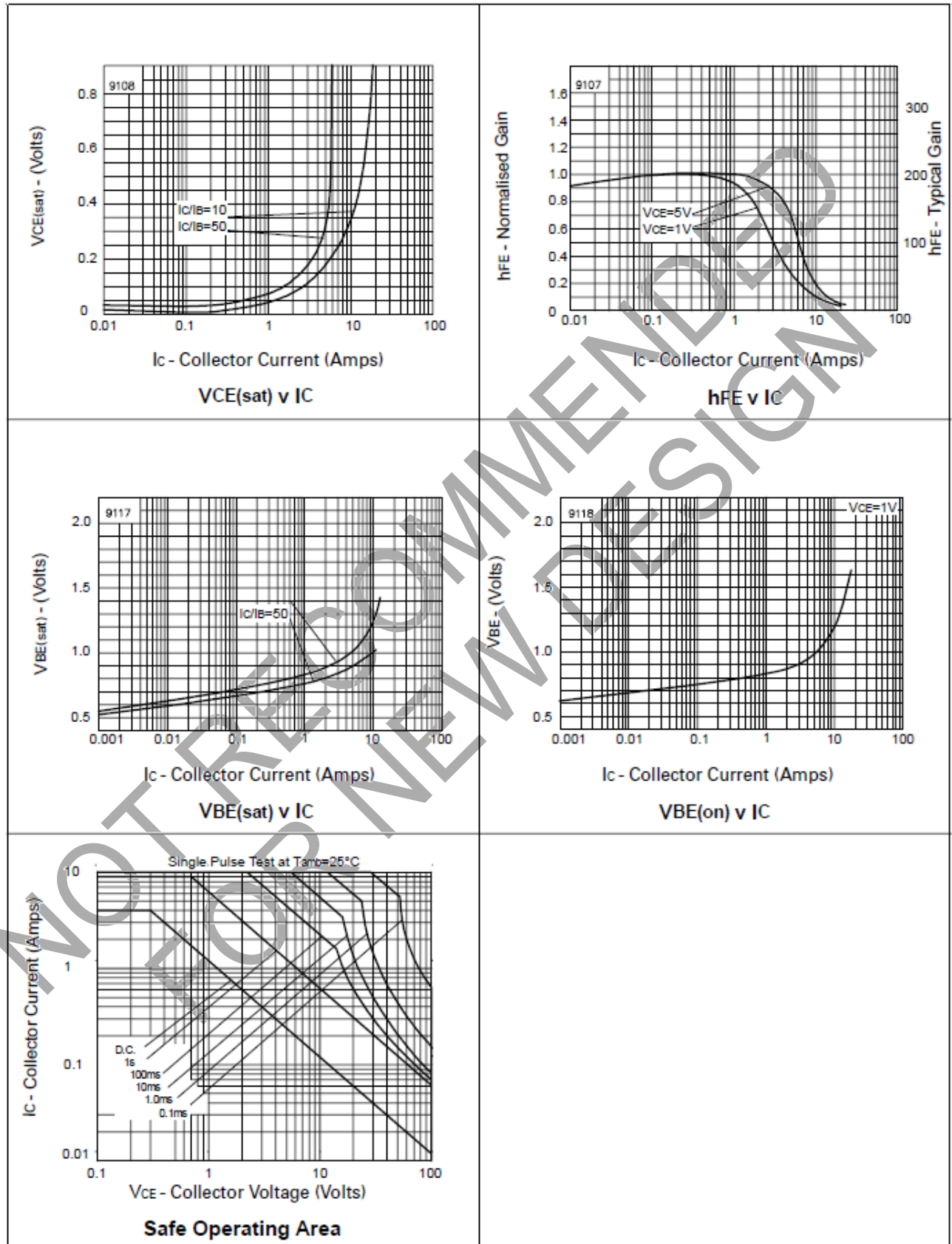
Notes: 1. The power which can be dissipated assuming the device is mounted in a typical manner on a PCB, with copper equal to 1-inch square minimum.
2. Measured under pulsed conditions. Pulse width = 300 μs . Duty cycle $\leq 2\%$.

Thermal Characteristics

Parameter		Symbol	Max	Unit
Thermal Resistance	Junction to Ambient	$R_{th(j-amb)}$	150	$^{\circ}\text{C/W}$
	Junction to Case	$R_{th(j-case)}$	50	

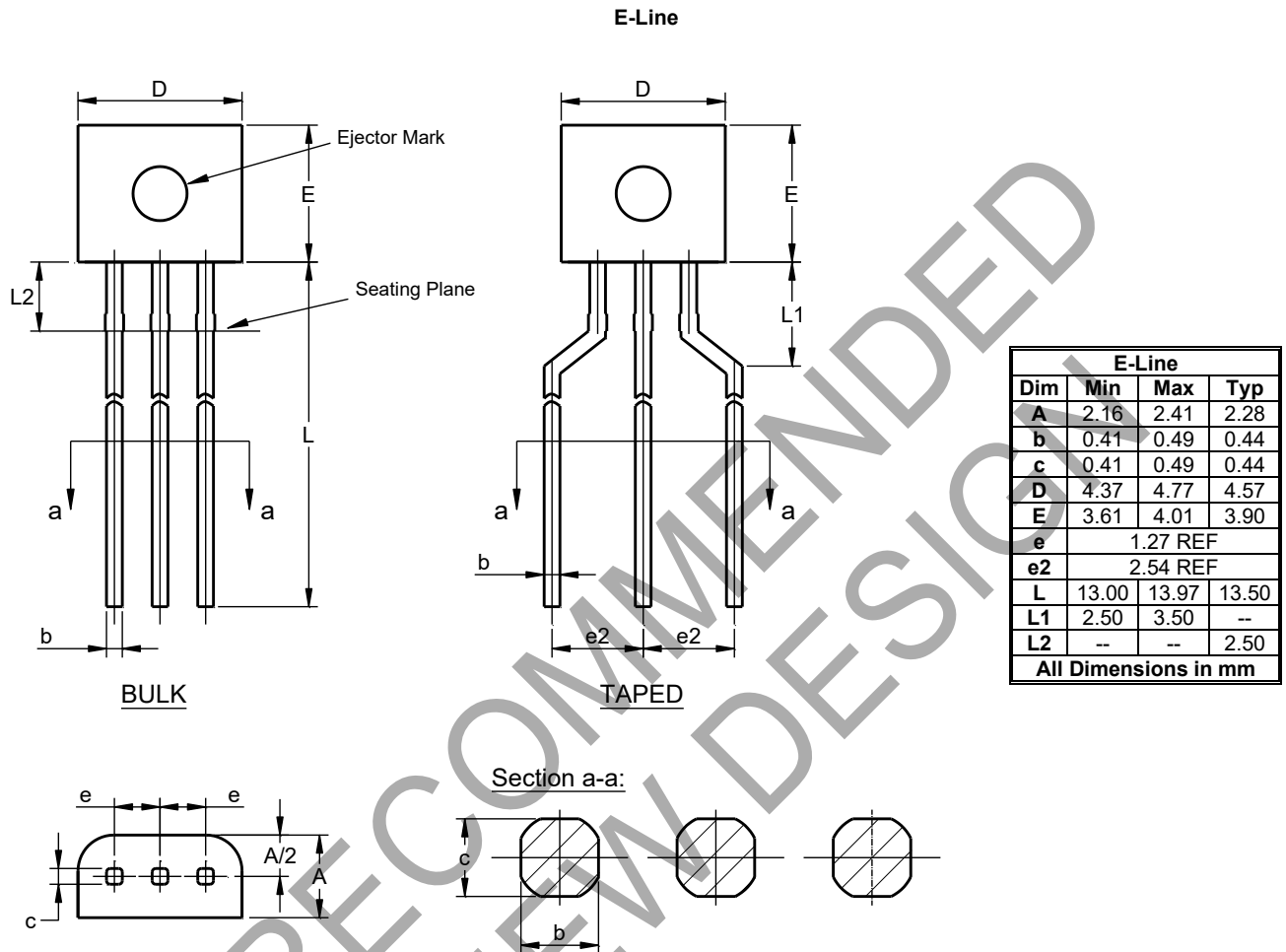


Typical Characteristics



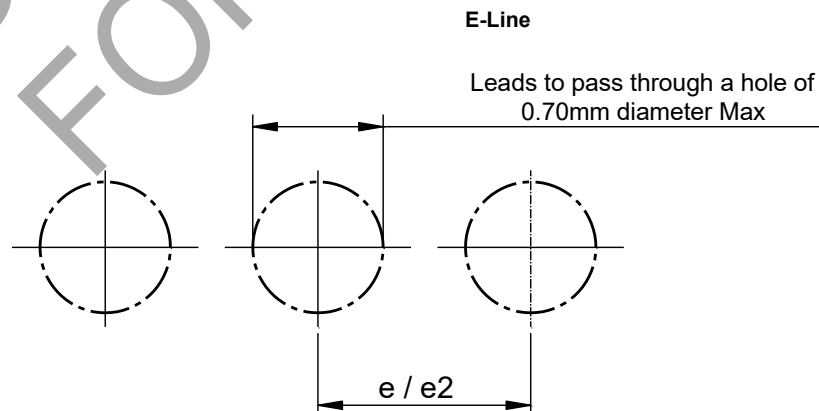
Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



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