

Features

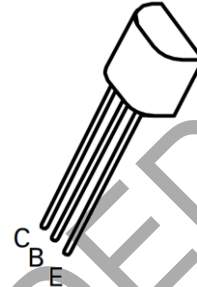
- 25 Volt V_{CE0}
- 2 Amp continuous current
- Low Saturation Voltage
- $P_{tot} = 1$ Watt
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.**
<https://www.diodes.com/quality/product-definitions/>

Applications

- Motor drivers
- DC-DC converters

Pin Assignments

E-Line (TO92 Compatible)



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	35	V
Collector-Emitter Voltage	V_{CE0}	25	V
Emitter-Base Voltage	V_{EB0}	5	V
Peak Pulse Current	I_{CM}	6	A
Continuous Collector Current	I_C	2	A
Power Dissipation at $T_{amb} = +25^{\circ}C$ Derate above $+25^{\circ}C$	P_{tot}	1 5.7	W mW/ $^{\circ}C$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +200	$^{\circ}C$

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

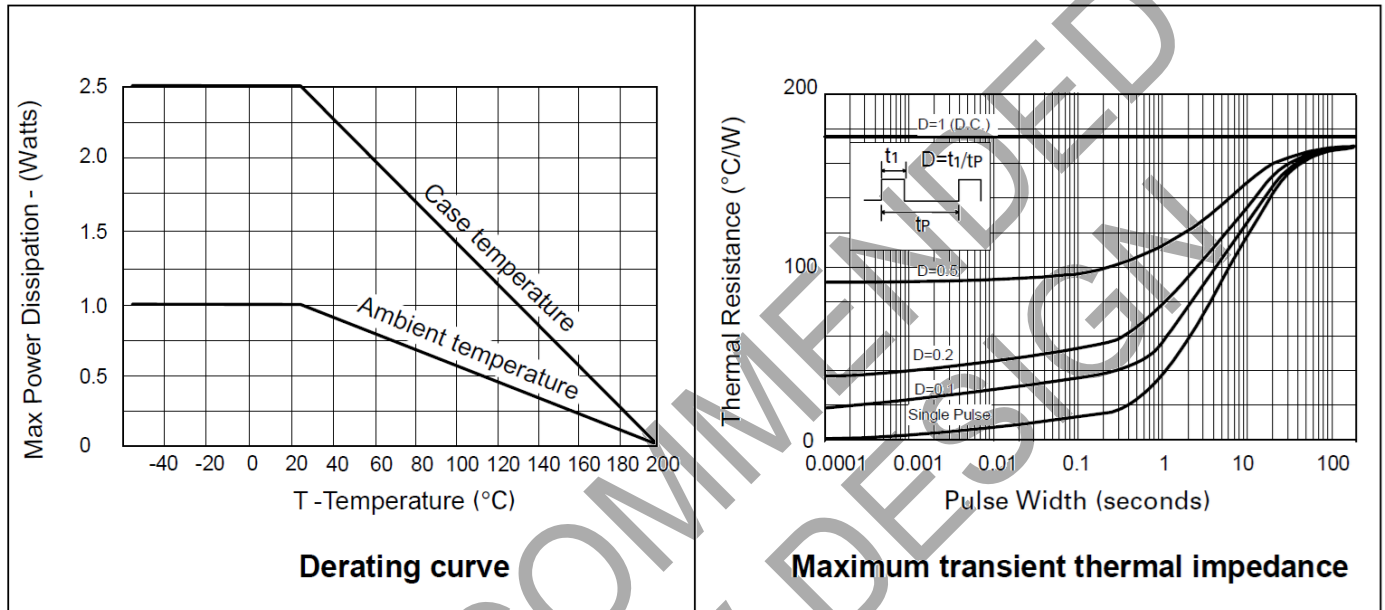
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CB0}$	35	—	—	V	$I_C = 100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CE0}$	25	—	—	V	$I_C = 10mA$ (Note 1)
Emitter-Base Breakdown Voltage	$V_{(BR)EB0}$	5	—	—	V	$I_E = 100\mu A$
Collector Cutoff Current	I_{CBO}	—	—	0.1 10	μA	$V_{CB} = 30V$ $V_{CB} = 30V, T_{amb} = +100^{\circ}C$
Emitter Cutoff Current	I_{EBO}	—	—	0.1	μA	$V_{EB} = 4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	0.12 0.23	0.3 0.5	V	$I_C = 1A, I_B = 100mA$ (Note 1) $I_C = 2A, I_B = 200mA$ (Note 1)
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	0.9	1.25	V	$I_C = 1A, I_B = 100mA$ (Note 1)
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	—	0.8	1	V	$I_C = 1A, V_{CE} = 2V$ (Note 1)
Static Forward Current Transfer Ratio	h_{FE}	70 100 75 15	200 200 150 50	— 300 — —	—	$I_C = 50mA, V_{CE} = 2V$ (Note 1) $I_C = 1A, V_{CE} = 2V$ (Note 1) $I_C = 2A, V_{CE} = 2V$ (Note 1) $I_C = 6A, V_{CE} = 2V$ (Note 1)
Transition Frequency	f_T	150	240	—	MHz	$I_C = 100mA, V_{CE} = 5V$ $f = 100MHz$
Output Capacitance	C_{ob0}	—	25	50	pF	$V_{CB} = 10V, f = 1MHz$
Switching Times	t_{on}	—	55	—	ns	$I_C = 500mA, V_{CC} = 10V$
	t_{off}	—	300	—	ns	$I_{B1} = I_{B2} = 50mA$

Note: 1. Measured under pulsed conditions. Pulse width = 300 μs . Duty cycle $\leq 2\%$.

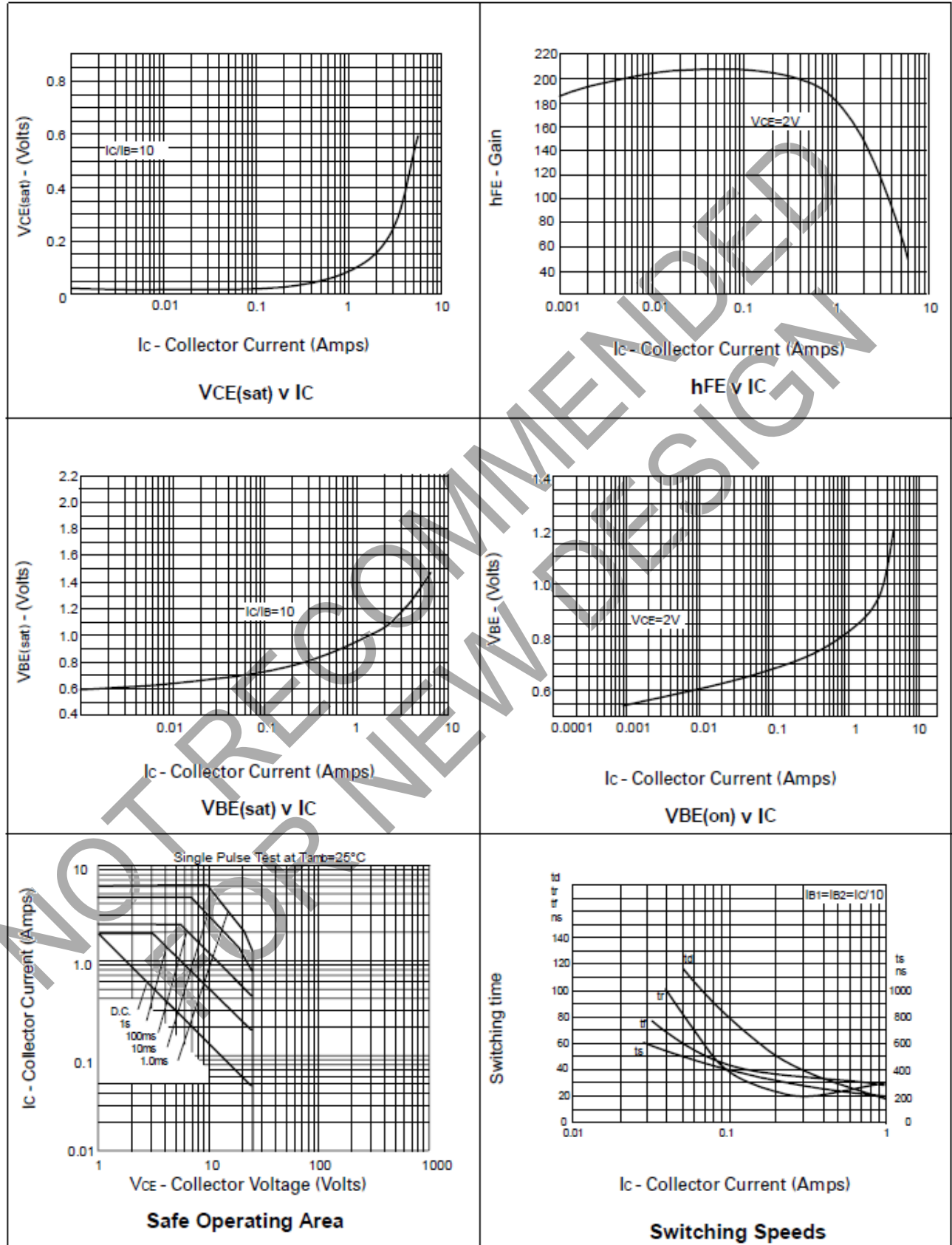
Thermal Characteristics

Parameter	Symbol	Max	Unit
Thermal Resistance	Junction to Ambient ¹	175	°C/W
	Junction to Ambient ²	116	
	Junction to Case	70	

Note: 2. Device mounted on PCB with copper equal to 1 sq. inch minimum.

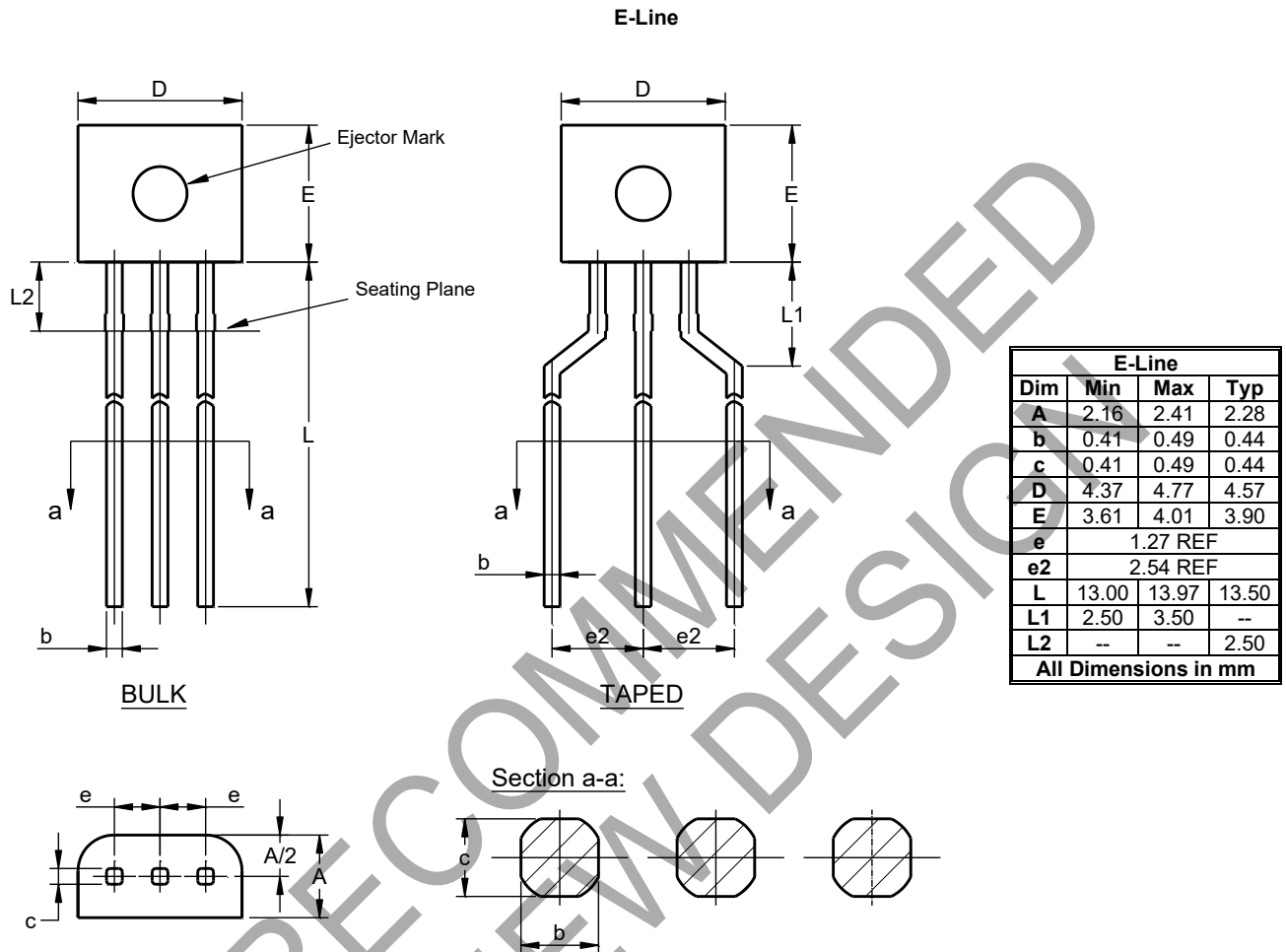


Typical Characteristics



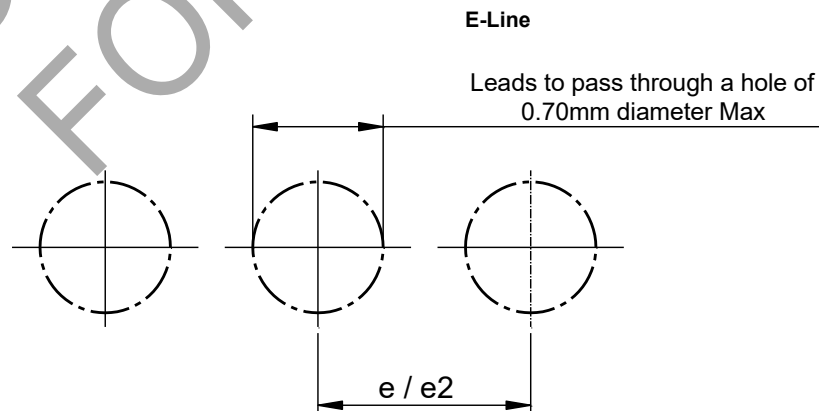
Package Outline Dimensions

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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