

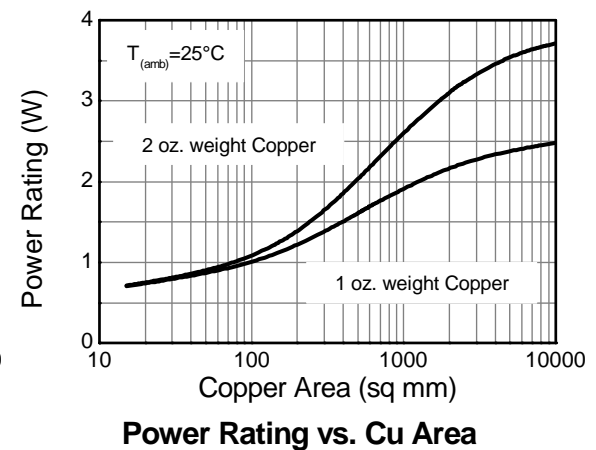
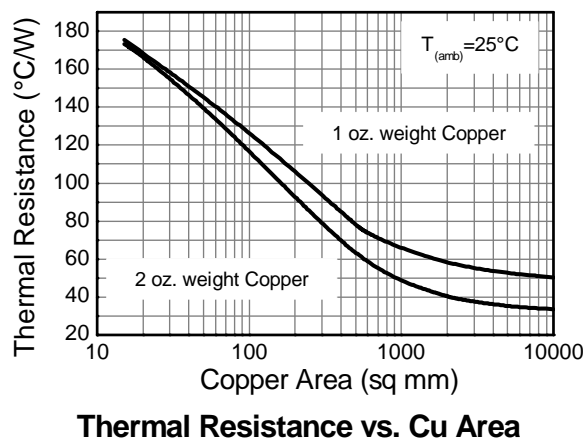
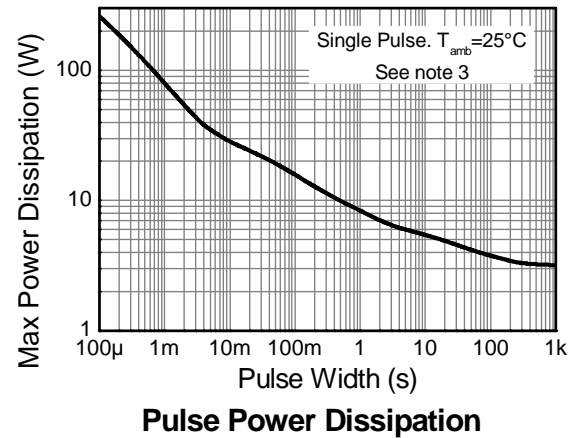
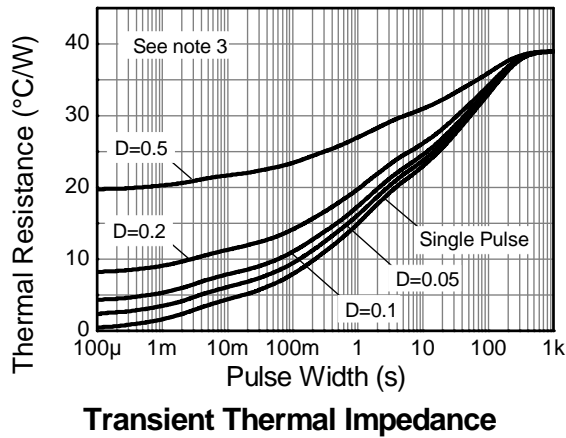
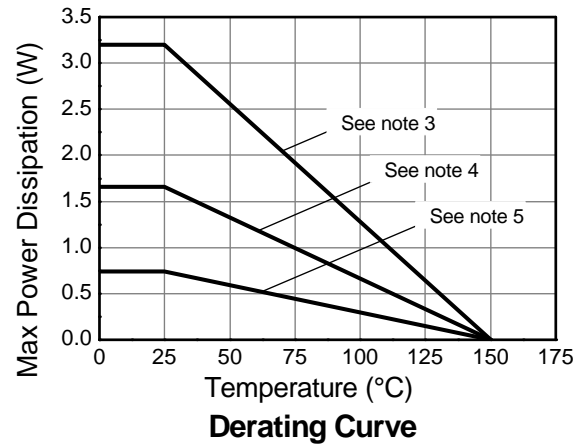
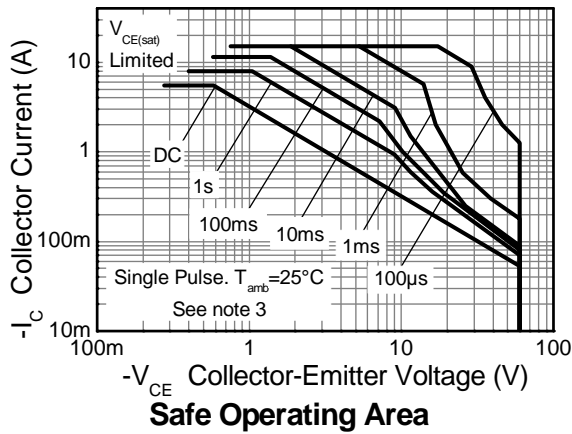
## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-7	V
Continuous Collector Current	I <sub>C</sub>	-5.5	A
Peak Pulse Current	I <sub>CM</sub>	-15	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ T <sub>A</sub> = 25°C (Note 4)	P <sub>D</sub>	3.2	W
Thermal Resistance, Junction to Ambient Air (Note 4) @T <sub>A</sub> = 25°C	R <sub>θJA</sub>	39	°C/W
Power Dissipation @ T <sub>A</sub> = 25°C (Note 5)	P <sub>D</sub>	1.7	W
Thermal Resistance, Junction to Ambient Air (Note 5) @T <sub>A</sub> = 25°C	R <sub>θJA</sub>	75	°C/W
Power Dissipation @ T <sub>A</sub> = 25°C (Note 6)	P <sub>D</sub>	0.74	W
Thermal Resistance, Junction to Ambient Air (Note 6) @T <sub>A</sub> = 25°C	R <sub>θJA</sub>	169	°C/W
Thermal Resistance, Junction to Collector Terminal	R <sub>θJT</sub>	5.6	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

- Notes:
- Device mounted on FR-4 PCB, single sided 2 oz. copper, collector pad dimensions 50mm x 50mm.
  - Device mounted on FR-4 PCB, single sided 1 oz. copper, collector pad dimensions 25mm x 25mm.
  - Device mounted on FR-4 PCB, 2 single sided 1oz. copper, minimum recommended pad layout.

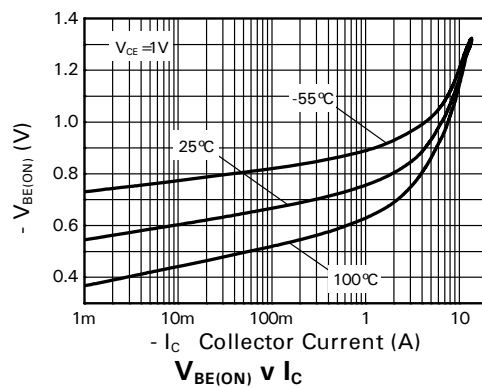
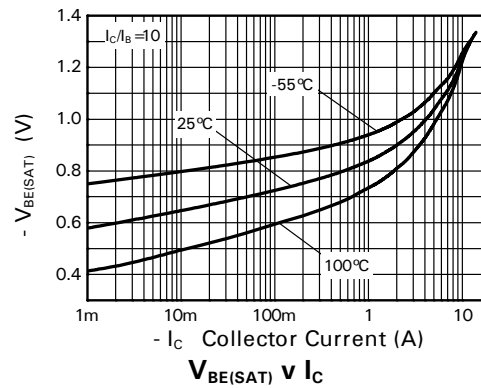
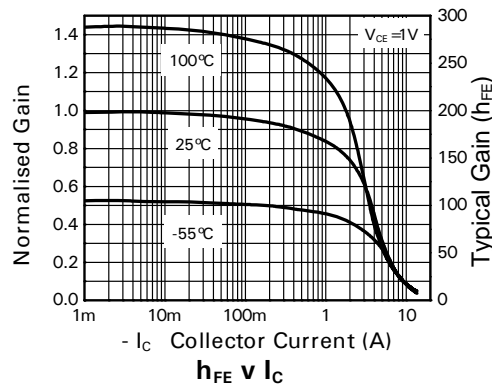
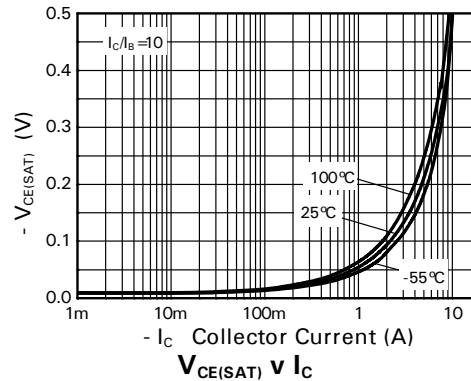
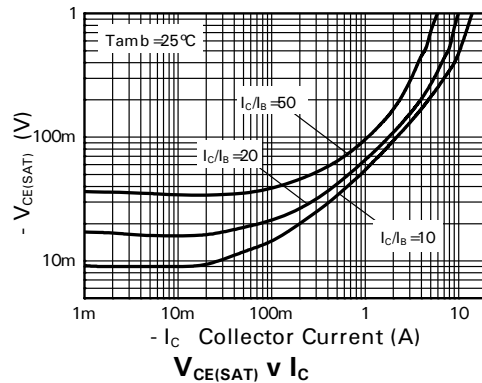


## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

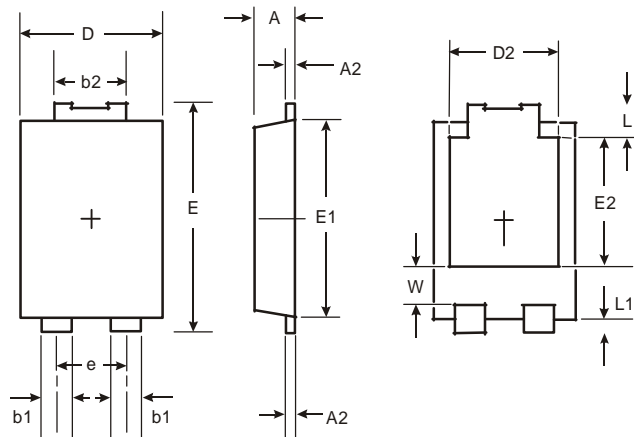
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-100	-120	—	V	I <sub>C</sub> = -100μA
Collector-Emitter Breakdown Voltage (Note 7)	V <sub>(BR)CEO</sub>	-60	-80	—	V	I <sub>C</sub> = -10mA
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-7	-8.1	—	V	I <sub>E</sub> = -100μA
Collector Cutoff Current	I <sub>CBO</sub>	—	<1	-20 -0.5	nA μA	V <sub>CB</sub> = -80V V <sub>CB</sub> = -80V, T <sub>amb</sub> = 100 °C
Collector Cutoff Current	I <sub>CER</sub> R ≤ 1kΩ	—	<1	-20 -0.5	nA μA	V <sub>CB</sub> = -80V V <sub>CB</sub> = -80V, T <sub>amb</sub> = 100 °C
Emitter Cutoff Current	I <sub>EBO</sub>	—	<1	-10	nA	V <sub>EB</sub> = -6V
Collector-Emitter Saturation Voltage (Note 7)	V <sub>CE(sat)</sub>	—	-15 -55 -90 -195	-25 -70 -120 -250	mV	I <sub>C</sub> = -0.1A, I <sub>B</sub> = -10mA I <sub>C</sub> = -1A, I <sub>B</sub> = -100mA I <sub>C</sub> = -2A, I <sub>B</sub> = -200mA I <sub>C</sub> = -5A, I <sub>B</sub> = -500mA
Base-Emitter Saturation Voltage (Note 7)	V <sub>BE(sat)</sub>	—	-1030	-1150	mV	I <sub>C</sub> = -5A, I <sub>B</sub> = -500mA
Base-Emitter Turn-On Voltage (Note 7)	V <sub>BE(on)</sub>	—	-920	-1020	mV	V <sub>CE</sub> = -1V, I <sub>C</sub> = -5A
DC Current Gain (Note 7)	h <sub>FE</sub>	100 100 45 10	250 200 90 25	— 300 — —	—	V <sub>CE</sub> = -1V, I <sub>C</sub> = -10mA V <sub>CE</sub> = -1V, I <sub>C</sub> = -2A V <sub>CE</sub> = -1V, I <sub>C</sub> = -5A V <sub>CE</sub> = -1V, I <sub>C</sub> = -10A
Transition Frequency	f <sub>T</sub>	—	120	—	MHz	V <sub>CE</sub> = -10V, I <sub>C</sub> = -100mA, f = 50MHz
Output Capacitance	C <sub>obo</sub>	—	48	—	pF	V <sub>CB</sub> = -10V, f = 1MHz
Switching Times	t <sub>on</sub> t <sub>off</sub>	— —	39 370	— —	ns	V <sub>CC</sub> = 10V, I <sub>C</sub> = 1A, I <sub>B1</sub> = I <sub>B2</sub> = -100mA

Notes: 7. Pulse Test: Pulse width ≤ 300μs. Duty cycle ≤ 2.0%.

## Typical Characteristic

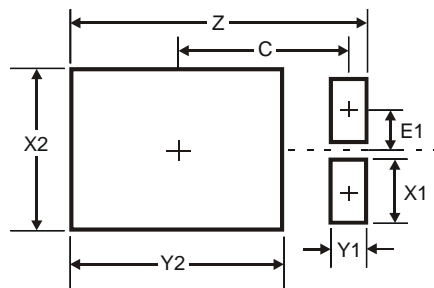


## Package Outline Dimensions



PowerDI®5		
Dim	Min	Max
A	1.05	1.15
A2	0.33	0.43
b1	0.80	0.99
b2	1.70	1.88
D	3.90	4.05
D2	3.054 Typ	
E	6.40	6.60
e	1.84 Typ	
E1	5.30	5.45
E2	3.549 Typ	
L	0.75	0.95
L1	0.50	0.65
W	1.10	1.41
All Dimensions in mm		

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	6.6
X1	1.4
X2	3.6
Y1	0.8
Y2	4.7
C	3.87
E1	0.9

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