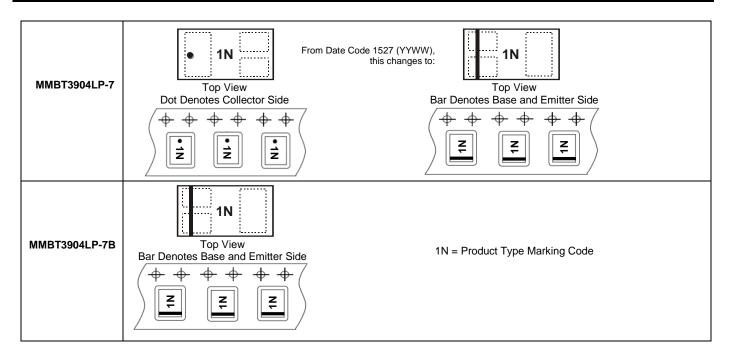


Marking Information



Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6.0	V
Collector Current	Ic	200	mA
Peak Collector Current	Ісм	200	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit	
Power Dissipation	(Note 5)	400		mW	
Fower Dissipation	(Note 6)	P _D	1000	IIIVV	
Thermal Resistance, Junction to Ambient	(Note 5)	R _{θJA}	310	°C/W	
Thermal Resistance, Junction to Ambient	(Note 6)		120		
Thermal Resistance, Junction to Lead	(Note 7)	$R_{ heta JL}$	120	°C/W	
Operating and Storage and Temperature Range		T _J , T _{STG}	-55 to +150	°C	

ESD Ratings (Note 8)

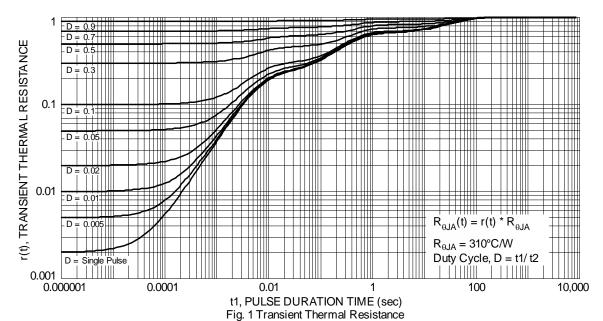
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	200	V	В

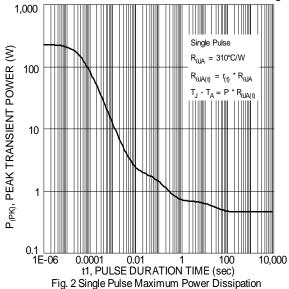
Notes:

- 5. For the device mounted on minimum recommended pad layout 1oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in steady state condition. The entire exposed collector pad is attached to the heatsink.
- 6. Same as Note 5, except the exposed collector pad is mounted on 25mm x 25mm 2oz copper.
- 7. Thermal resistance from junction to solder-point (on the exposed collector pad).
- 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



Thermal Characteristics







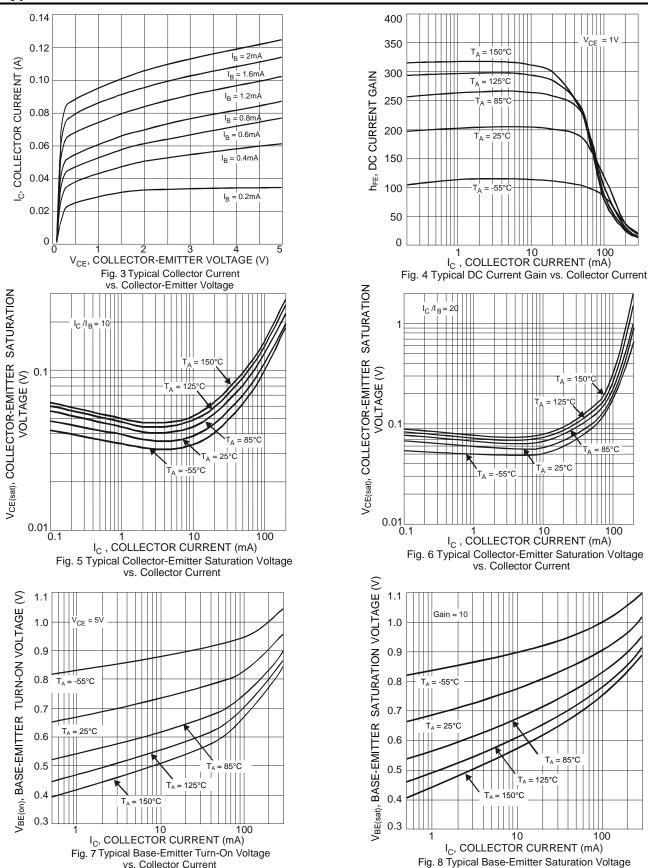
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition	
OFF CHARACTERISTICS			•	•		
Collector-Base Breakdown Voltage	BV_{CBO}	60	_	V	$I_C = 10\mu A, I_E = 0A$	
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	40	_	V	$I_C = 1.0 \text{mA}, I_B = 0 \text{A}$	
Emitter-Base Breakdown Voltage	BV_{EBO}	6.0	_	V	$I_E = 10\mu A, I_C = 0A$	
Collector Cutoff Current	I _{CEX}		50	nA	$V_{CE} = 30V$, $V_{EB(off)} = 3.0V$	
Base Cutoff Current	I _{BL}		50	nA	$V_{CE} = 30V, V_{EB(off)} = 3.0V$	
ON CHARACTERISTICS (Note 9)						
		40	—		$I_C = 100\mu A, V_{CE} = 1.0V$	
		70	—		I _C = 1.0mA, V _{CE} = 1.0V	
DC Current Gain	h _{FE}	100	300	_	$I_C = 10mA, V_{CE} = 1.0V$	
		60	_		I _C = 50mA, V _{CE} = 1.0V	
		30	_		I _C = 100mA, V _{CE} = 1.0V	
Collector Emitter Seturation Voltage	V _{CE(sat)}	_	0.20	V	I _C = 10mA, I _B = 1.0mA	
Collector-Emitter Saturation Voltage			0.30		I _C = 50mA, I _B = 5.0mA	
Dago Emittor Coturation Voltage	V _{BE(sat)}	0.65	0.85	V	I _C = 10mA, I _B = 1.0mA	
Base-Emitter Saturation Voltage			0.95		I _C = 50mA, I _B = 5.0mA	
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}	_	4.0	pF	$V_{CB} = 5.0V$, $f = 1.0MHz$, $I_E = 0A$	
Input Capacitance	C_{ibo}	_	8.5	pF	$V_{EB} = 0.5V$, $f = 1.0MHz$, $I_{C} = 0A$	
Input Impedance	h _{ie}	1.0	10	kΩ		
Voltage Feedback Ratio	h _{re}	0.5	8.0	x 10 ⁻⁴	$V_{CE} = 10V, I_{C} = 1.0mA,$	
Small Signal Current Gain	h _{fe}	100	400	_	f = 1.0kHz	
Output Admittance	h _{oe}	1.0	40	μs	<u> </u>	
Current Gain-Bandwidth Product	f⊤	300	_	MHz	$V_{CE} = 20V, I_{C} = 10mA,$ f = 100MHz	
SWITCHING CHARACTERISTICS						
Delay Time	t _d	_	35	ns	$V_{CC} = 3.0V, I_{C} = 10mA,$	
Rise Time	t _r	_	35	ns	$V_{BE(off)} = 0.5V, I_{B1} = 1.0mA$	
Storage Time	t _s	_	200	ns	$V_{CC} = 3.0V, I_{C} = 10mA,$	
Fall Time	t _f	_	50	ns	$I_{B1} = -I_{B2} = 1.0 \text{mA}$	

Note: 9. Measured under pulsed conditions. Pulse width \leq 300 μ s. Duty cycle \leq 2%.



Typical Electrical Characteristics (@TA = +25°C, unless otherwise specified.)



vs. Collector Current

100

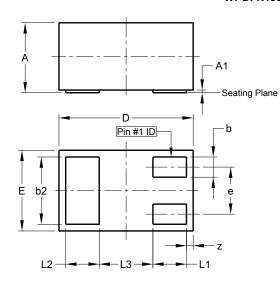
vs. Collector Current



Package Outline Dimensions

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

X1-DFN1006-3

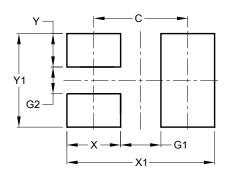


X1-DFN1006-3				
Dim	Min	Max	Тур	
Α	0.47	0.53	0.50	
A1	0.00	0.05	0.03	
b	0.10	0.20	0.15	
b2	0.45	0.55	0.50	
D	0.95	1.075	1.00	
Е	0.55	0.675	0.60	
е	-	-	0.35	
L1	0.20	0.30	0.25	
L2	0.20	0.30	0.25	
L3		-	0.40	
z	0.02	0.08	0.05	
All Dimensions in mm				

Suggested Pad Layout

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

X1-DFN1006-3



Dimensions	value (in mm)
С	0.70
G1	0.30
G2	0.20
X	0.40
X1	1.10
Y	0.25
Y1	0.70



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