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

Characteristic		Symbol	Value	Unit
Supply Voltage, (2) to (3)		V_{CC}	-50	V
Input Voltage, (1) to (2)	DDTA113ZE	V_{IN}	+5 to -10	V
	DDTA123YE		+5 to -12	
	DDTA123JE		+5 to -12	
	DDTA143XE		+7 to -20	
	DDTA143FE		+6 to -30	
	DDTA143ZE		+5 to -30	
	DDTA114YE		+6 to -40	
	DDTA114WE		+10 to -30	
	DDTA124XE		+10 to -40	
	DDTA144VE		+15 to -40	
	DDTA144WE		+10 to -40	
Output Current	DDTA113ZE	I_O	-100	mA
	DDTA123YE		-100	
	DDTA123JE		-100	
	DDTA143XE		-100	
	DDTA143FE		-100	
	DDTA143ZE		-100	
	DDTA114YE		-70	
	DDTA114WE		-100	
	DDTA124XE		-50	
	DDTA144VE		-30	
	DDTA144WE		-30	
Output Current	All	$I_{C(MAX)}$	-100	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	150	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Note: 5. Mounted on FR4 PC Board with minimum recommended pad layout.

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

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTA113ZE	$V_{I(OFF)}$	-0.3	—	—	V	V_{CC} = -5V, I_O = -100µA
	DDTA123YE		-0.3				
	DDTA123JE		-0.5				
	DDTA143XE		-0.3				
	DDTA143FE		-0.3				
	DDTA143ZE		-0.5				
	DDTA114YE		-0.3				
	DDTA114WE		-0.8				
	DDTA124XE		-0.4				
	DDTA144VE		-1.0				
	DDTA144WE		-0.8				
	DDTA113ZE	$V_{I(ON)}$	—	—	-3.0		V_O = -0.3V, I_O = -20mA
	DDTA123YE				-3.0		V_O = -0.3V, I_O = -20mA
	DDTA123JE				-1.1		V_O = -0.3V, I_O = -5mA
	DDTA143XE				-2.5		V_O = -0.3V, I_O = -20mA
	DDTA143FE				-1.3		V_O = -0.3V, I_O = -3mA
	DDTA143ZE				-1.3		V_O = -0.3V, I_O = -5mA
	DDTA114YE				-1.4		V_O = -0.3V, I_O = -1mA
	DDTA114WE				-3.0		V_O = -0.3V, I_O = -2mA
	DDTA124XE				-2.5		V_O = -0.3V, I_O = -2mA
	DDTA144VE				-5.0		V_O = -0.3V, I_O = -2mA
	DDTA144WE				-4.0		V_O = -0.3V, I_O = -2mA
Output Voltage		$V_{O(ON)}$	—	-0.1	-0.3	V	I_O/I_I = -5mA/-0.25mA DDTA123E I_O/I_I = -5mA/-0.25mA DDTA143E I_O/I_I = -5mA/-0.25mA DDTA114E I_O/I_I = -10mA/-0.5mA All Others
Input Current	DDTA113ZE	I_I	—	—	-7.2	mA	V_I = -5V
	DDTA123YE				-3.8		
	DDTA123JE				-3.6		
	DDTA143XE				-1.8		
	DDTA143FE				-1.8		
	DDTA143ZE				-1.8		
	DDTA114YE				-0.88		
	DDTA114WE				-0.88		
	DDTA124XE				-0.36		
	DDTA144VE				-0.16		
	DDTA144WE				-0.16		
Output Current		$I_{O(OFF)}$	—	—	-0.5	µA	V_{CC} = -50V, V_I = 0V
DC Current Gain	DDTA113ZE	G_I	33	—	—	—	V_O = -5V, I_O = -10mA
	DDTA123YE		33				
	DDTA123JE		80				
	DDTA143XE		30				
	DDTA143FE		68				
	DDTA143ZE		80				
	DDTA114YE		68				
	DDTA114WE		24				
	DDTA124XE		68				
	DDTA144VE		33				
	DDTA144WE		56				
Input Resistor Tolerance		ΔR_1	-30	—	+30	%	—
Resistance Ratio Tolerance		$\Delta R_2/R_1$	-20	—	+20	%	—
Gain-Bandwidth Product (Note 6)		f_T	—	250	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

Note: 6. Transistor – For Reference Only

Typical Curves – DDTA123JE

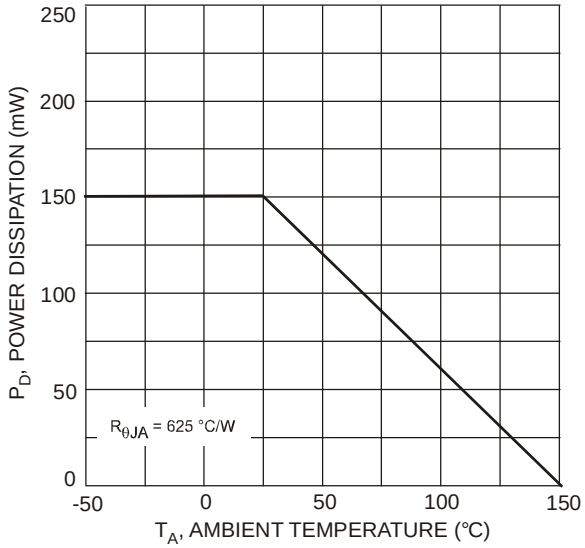


Fig. 1 Power Dissipation vs. Ambient Temperature

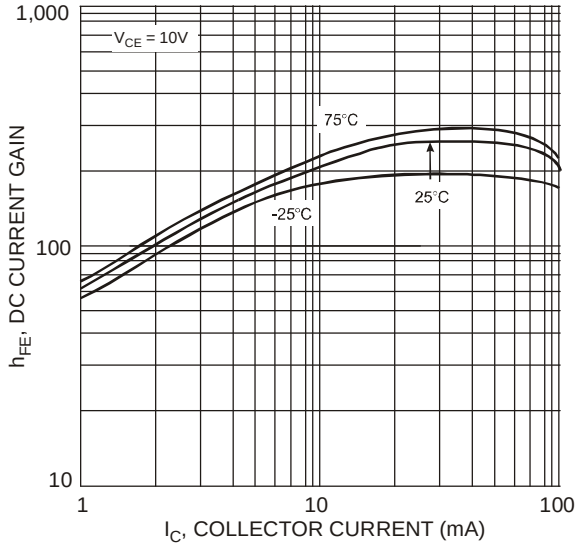


Fig. 2 Typical DC Current Gain vs. Collector Current

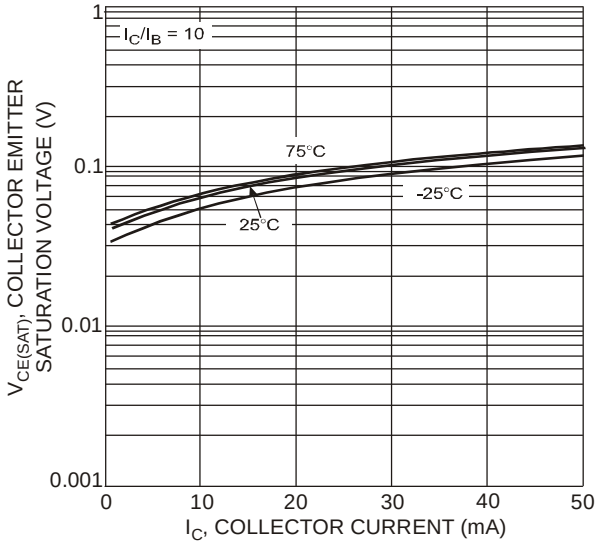


Fig. 3 Collector Emitter Saturation Voltage vs. Collector Current

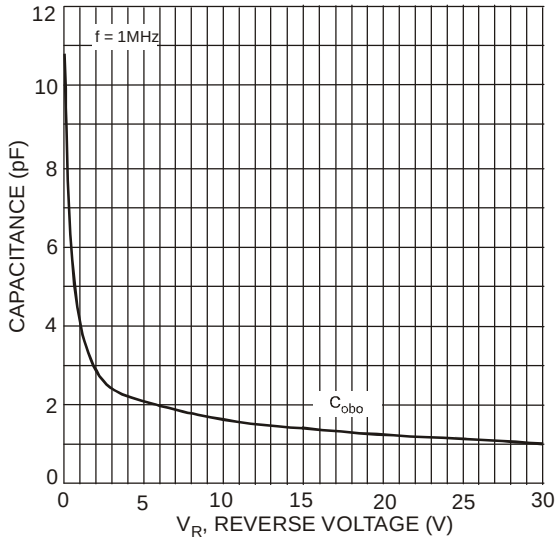


Fig. 4 Typical Capacitance Characteristics

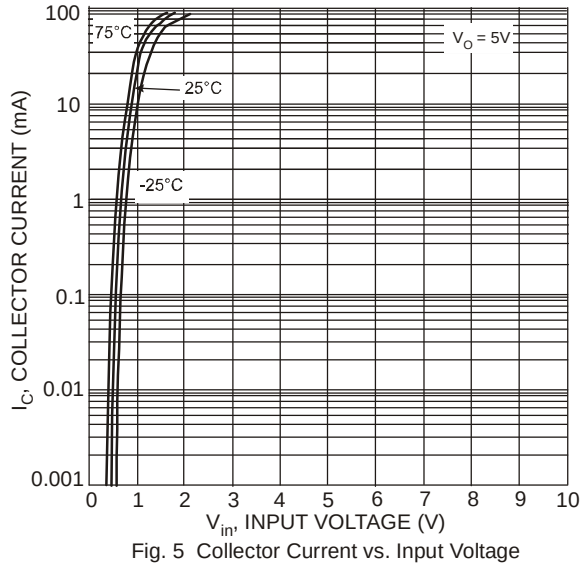


Fig. 5 Collector Current vs. Input Voltage

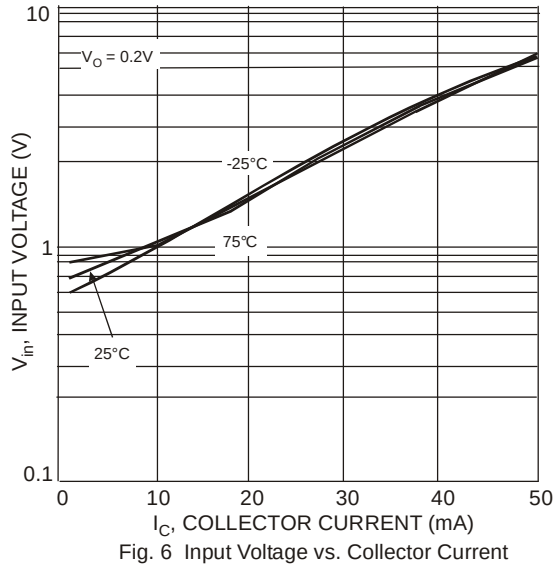
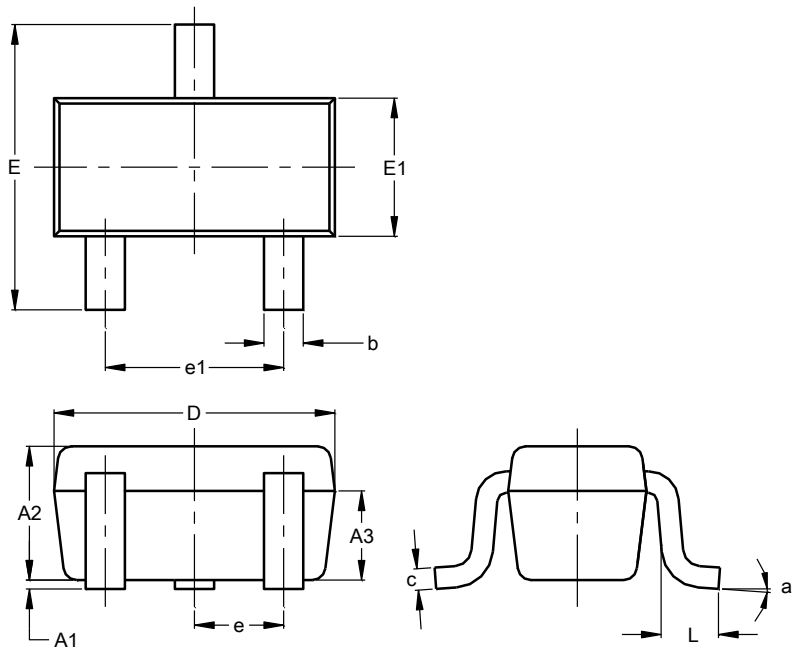


Fig. 6 Input Voltage vs. Collector Current

Package Outline Dimensions

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

SOT523

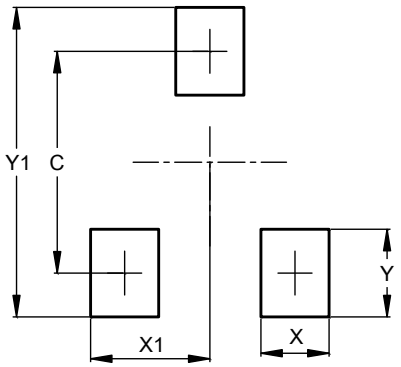


SOT523			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

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

SOT523



Dimensions	Value
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80

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