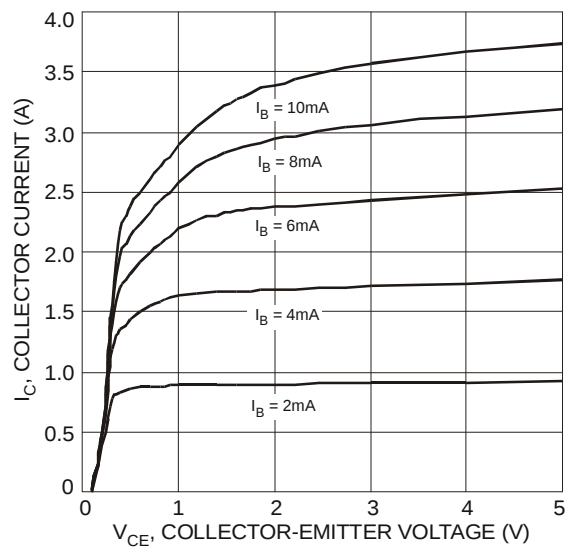
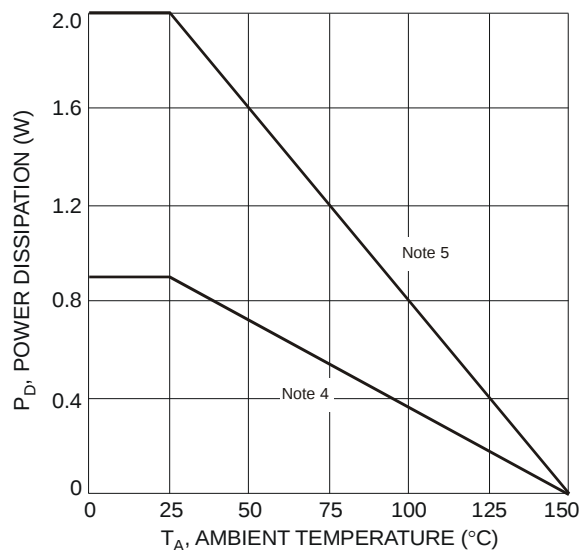


Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	V _{(BR)CBO}	40	—	—	V	I _C = 100μA
Collector-Emitter Breakdown Voltage (Note 6)	V _{(BR)CEO}	40	—	—	V	I _C = 10mA
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6	—	—	V	I _E = 100μA
Collector-Base Cutoff Current	I _{CBO}	—	—	100	nA	V _{CB} = 30V, I _E = 0
		—	—	50	μA	V _{CB} = 30V, I _E = 0, T _A = 150°C
Collector-Emitter Cut-Off Current	I _{CES}	—	—	100	nA	V _{CE} = 30V, V _{BE} = 0V
Emitter-Base Cutoff Current	I _{EBO}	—	—	100	nA	V _{EB} = 5V, I _C = 0
ON CHARACTERISTICS (Note 6)						
DC Current Gain	h _{FE}	300	—	—	—	V _{CE} = 2V, I _C = 0.5A
		300	—	—	—	V _{CE} = 2V, I _C = 1A
		250	—	—	—	V _{CE} = 2V, I _C = 2A
		100	—	—	—	V _{CE} = 2V, I _C = 5A
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	—	90	mV	I _C = 0.5A, I _B = 5mA
		—	—	120	mV	I _C = 1A, I _B = 10mA
		—	80	150	mV	I _C = 2A, I _B = 200mA
		—	160	290	mV	I _C = 4A, I _B = 200mA
		—	185	355	mV	I _C = 5A, I _B = 500mA
Equivalent On-Resistance	R _{CE(SAT)}	—	37	71	mΩ	I _C = 5A, I _B = 500mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	—	1.1	V	I _C = 4A, I _B = 200mA
		—	—	1.2	V	I _C = 5A, I _B = 500mA
Base-Emitter Turn-on Voltage	V _{BE(ON)}	—	—	1.1	V	V _{CE} = 2V, I _C = 2A
SMALL SIGNAL CHARACTERISTICS						
Transition Frequency	f _T	70	—	—	MHz	V _{CE} = 10V, I _C = 0.1A, f = 100MHz
Collector Capacitance	C _C	—	—	75	pF	V _{CB} = 10V, I _E = 0A, f = 1MHz
SWITCHING CHARACTERISTICS						
Turn-On Time	t _{on}	—	135	—	ns	V _{CC} = 10V, I _C = 2A, I _{B1} = 40mA
Delay Time	t _d	—	60	—	ns	
Rise Time	t _r	—	75	—	ns	
Turn-Off Time	t _{off}	—	670	—	ns	V _{CC} = 10V, I _C = 2A, I _{B1} = I _{B2} = 40mA
Storage Time	t _s	—	570	—	ns	
Fall Time	t _f	—	100	—	ns	

Notes: 6. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%.



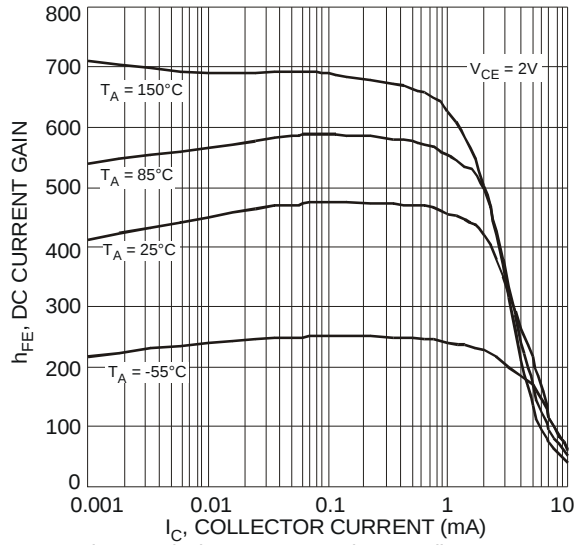


Fig. 3 Typical DC Current Gain vs. Collector Current

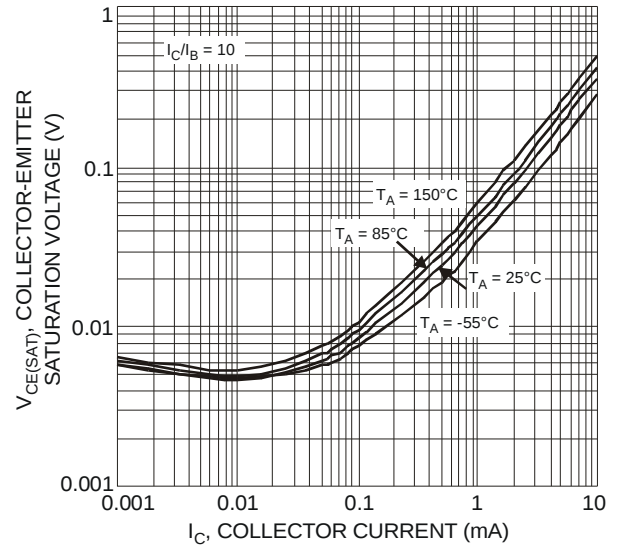


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

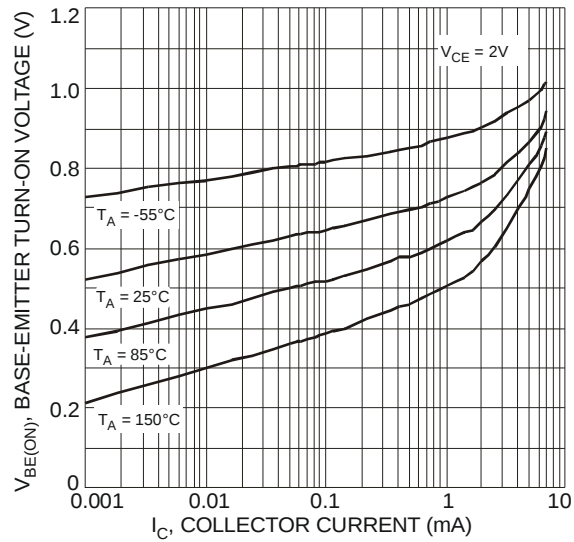


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

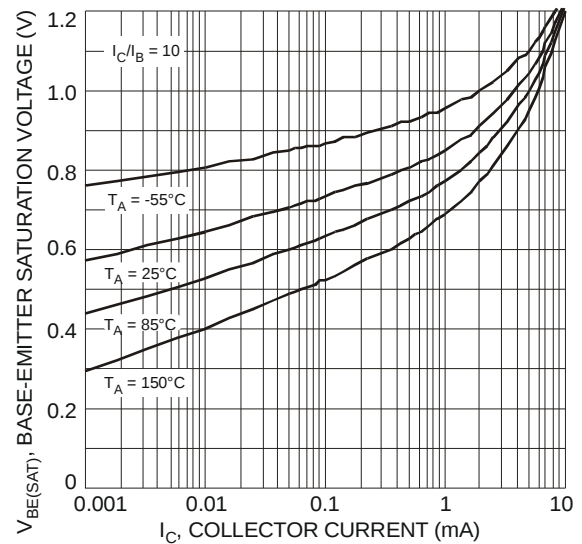


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

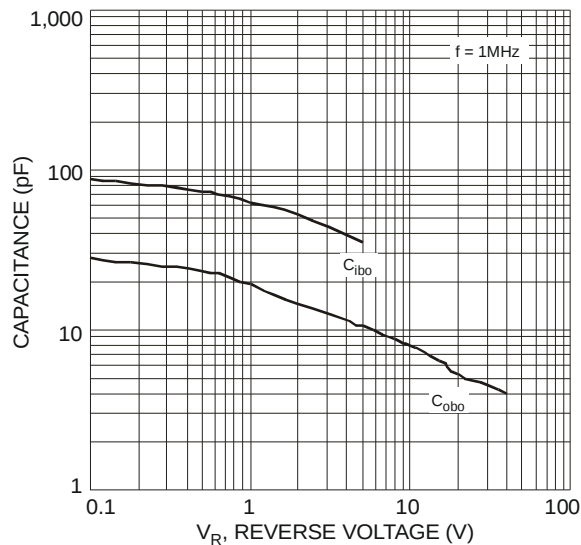


Fig. 7 Typical Capacitance Characteristics

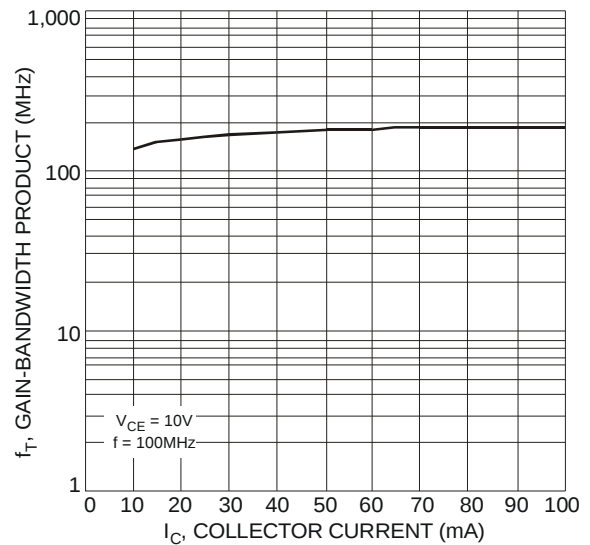


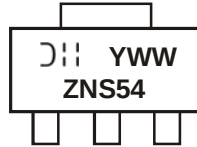
Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 7)

Part Number	Case	Packaging
DSS4540X-13	SOT89-3L	2500/Tape & Reel

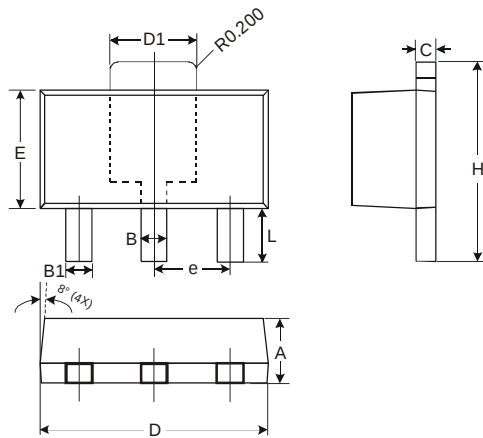
Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



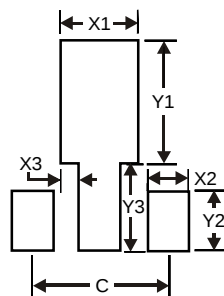
ZNS54 = Product Type Marking Code
 DII = Manufacturer's Code Marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 8 = 2008)
 WW = Week code 01 - 52

Package Outline Dimensions



SOT89-3L			
Dim	Min	Max	Typ
A	1.40	1.60	1.50
B	0.45	0.55	0.50
B1	0.37	0.47	0.42
C	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.50	1.70	1.60
E	2.40	2.60	2.50
e	—	—	1.50
H	3.95	4.25	4.10
L	0.90	1.20	1.05
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
X1	1.7
X2	0.9
X3	0.4
Y1	2.7
Y2	1.3
Y3	1.9
C	3.0

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