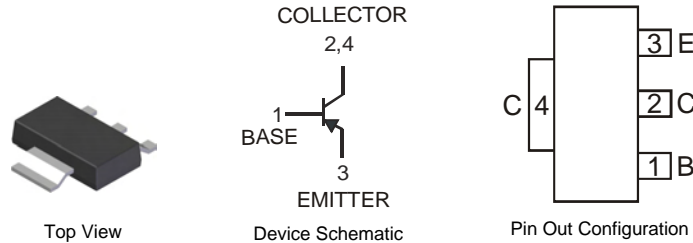


Features

- Epitaxial Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

Mechanical Data

- Case: SOT-223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish — Matte Tin annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.115 grams (approximate)



Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-6	V
Peak Pulse Current	I_{CM}	-5	A
Continuous Collector Current	I_C	-3	A
Base Current	I_B	-1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @ $T_A = 25^\circ\text{C}$	P_D	1	W
Thermal Resistance, Junction to Ambient Air (Note 3) @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$	125	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. No purposefully added lead.
 2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 3. Device mounted on FR-4 PCB; pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
OFF CHARACTERISTICS (Note 4)						
Collector-Base Cutoff Current	I _{CBO}	—	—	-100	nA	V _{CB} = -50V, I _E = 0
Emitter-Base Cutoff Current	I _{EBO}	—	—	-50	μA	V _{CB} = -50V, I _E = 0, T _A = 150°C
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-50	—	—	V	V _{EB} = -5V, I _C = 0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	-50	—	—	V	I _C = -100μA
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	-5	—	—	V	I _E = -100μA
ON CHARACTERISTICS (Note 4)						
DC Current Gain	h _{FE}	200	—	—	—	V _{CE} = -2V, I _C = -0.5A
		200	—	—		V _{CE} = -2V, I _C = -1A
		100	—	—		V _{CE} = -2V, I _C = -2A
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	—	-100	mV	I _C = -0.5A, I _B = -50mA
		—	—	-180		I _C = -1A, I _B = -50mA
		—	—	-300		I _C = -2A, I _B = -200mA
Equivalent On-Resistance	R _{CE(SAT)}	—	67	150	mΩ	I _E = -2A, I _B = -200mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	—	-1.2	V	I _C = -2A, I _B = -200mA
Base-Emitter Turn-on Voltage	V _{BE(ON)}	—	—	-1.1	V	V _{CE} = -2V, I _C = -1A
SMALL SIGNAL CHARACTERISTICS						
Transition Frequency	f _T	100	—	—	MHz	V _{CE} = -5V, I _C = -100mA, f = 100MHz
Output Capacitance	C _{obo}	—	—	40	pF	V _{CB} = -10V, f = 1MHz

Notes: 4. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%.

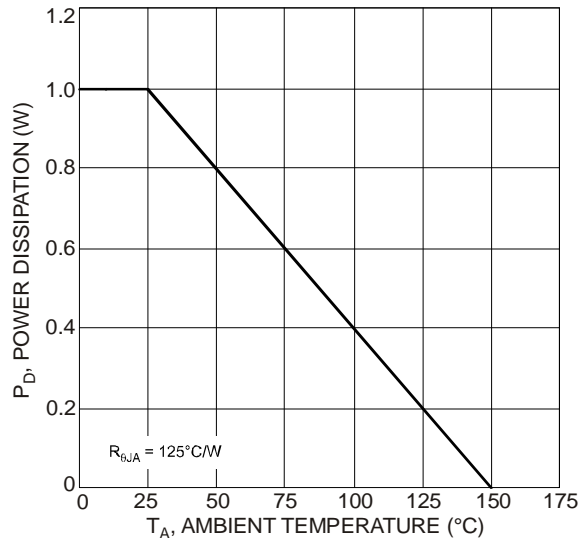


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

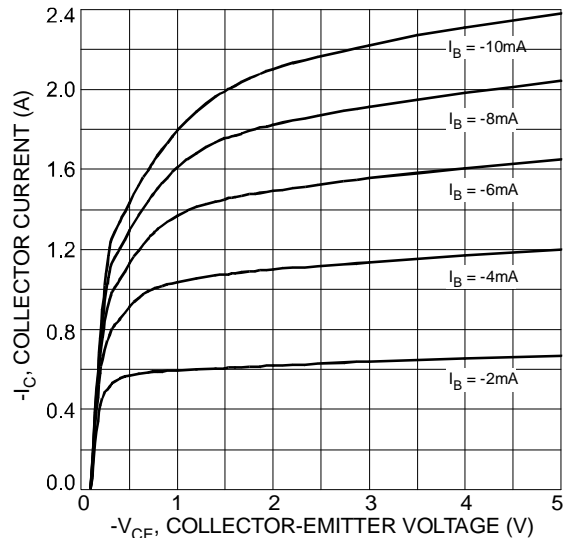
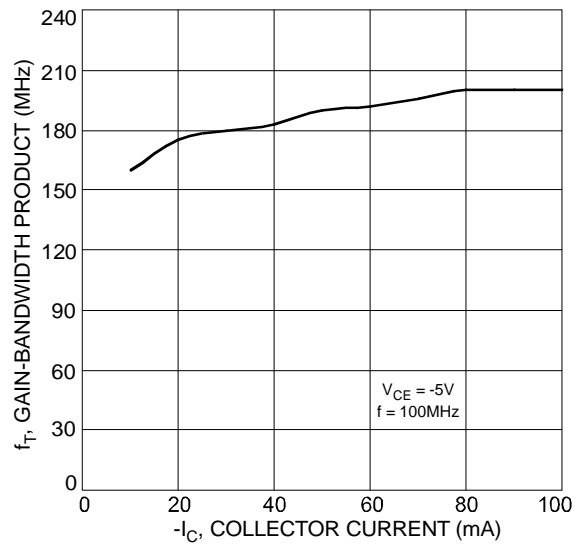
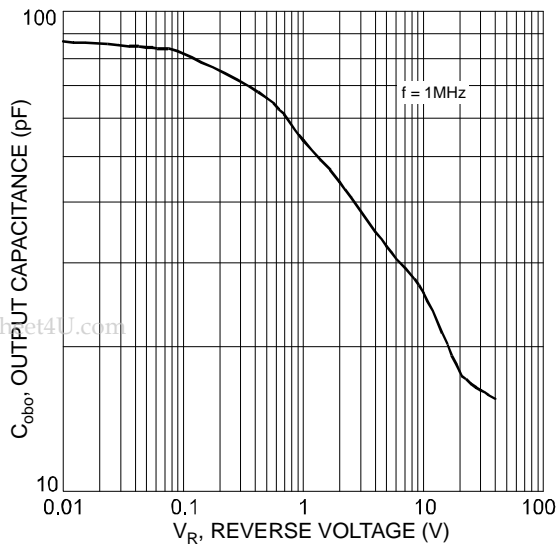
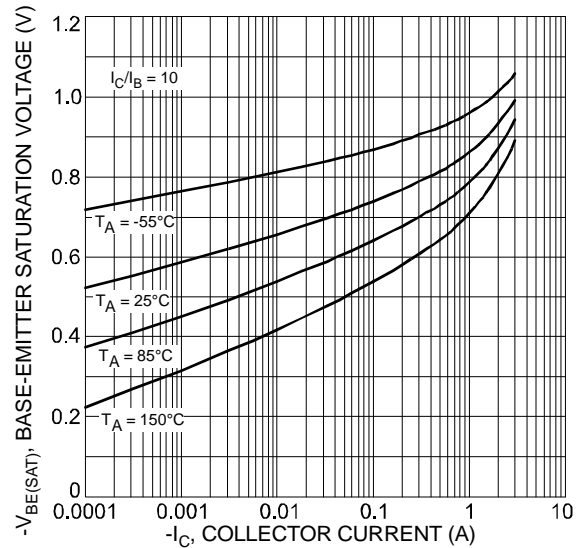
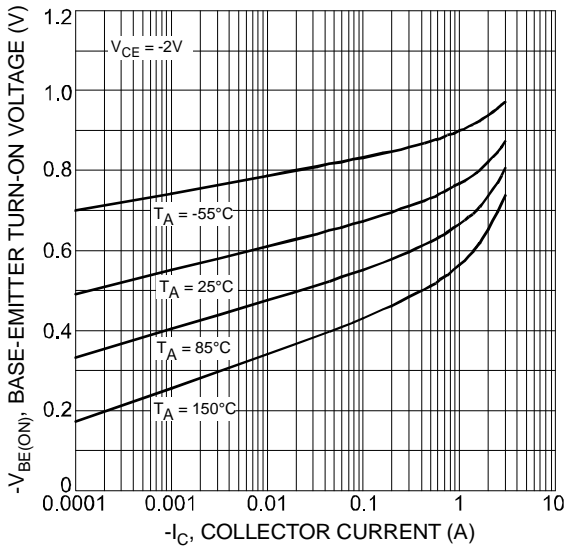
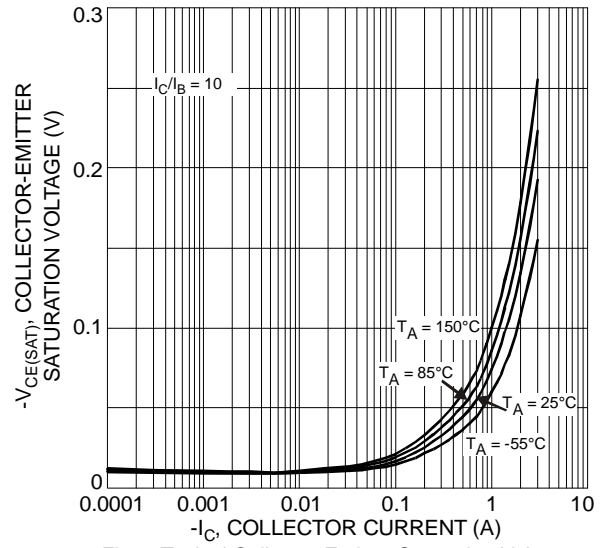
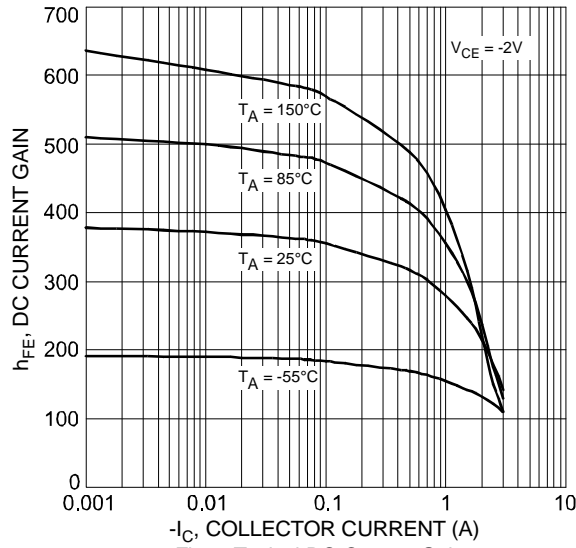


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage



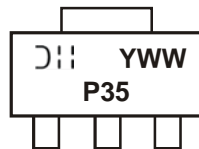
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Ordering Information (Note 5)

Part Number	Case	Packaging
DPLS350E-13	SOT-223	2500/Tape & Reel

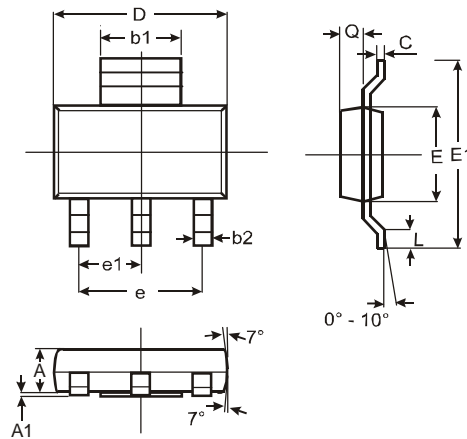
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



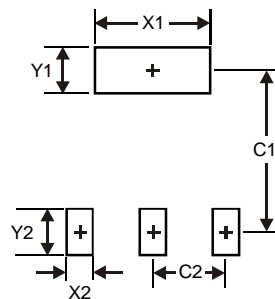
P35 = Product Type Marking Code
 P35 = Manufacturer's Code Marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 7 = 2007)
 WW = Week code 01 - 52

Package Outline Dimensions



SOT-223			
Dim	Min	Max	Typ
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b1	2.90	3.10	3.00
b2	0.60	0.80	0.70
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	—	—	4.60
e1	—	—	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
X1	3.3
X2	1.2
Y1	1.6
Y2	1.6
C1	6.4
C2	2.3

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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