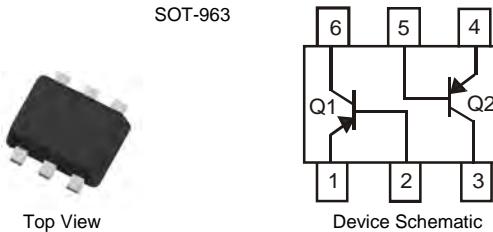


Features

- Epitaxial Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Lead Free By Design/RoHS Compliant (Note 1)**
- "Green" Device (Note 2)
- Ultra Small Package

**Mechanical Data**

- Case: SOT-963
- 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. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.0027 grams (approximate)

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current - Continuous	I_C	-100	mA
Base Current	I_B	-30	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	P_D	300	mW
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-50	—	—	V	$I_C = -10\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-50	—	—	V	$I_C = -1\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10\mu\text{A}, I_C = 0$
Collector Cut-Off Current	I_{CBO}	—	—	-0.1	μA	$V_{CB} = -50\text{V}, I_E = 0$
Emitter Cut-Off Current	I_{EBO}	—	—	-0.1	μA	$V_{EB} = -5\text{V}, I_C = 0$
ON CHARACTERISTICS (Note 4)						
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-0.15	-0.3	V	$I_C = -100\text{mA}, I_B = -10\text{mA}$
DC Current Gain	h_{FE}	120	—	240	—	$V_{CE} = -6\text{V}, I_C = -2\text{mA}$
SMALL SIGNAL CHARACTERISTICS						
Transition Frequency	f_T	80	—	—	MHz	$V_{CE} = -10\text{V}, I_E = 1\text{mA}$ $f = 30\text{MHz}$
Output Capacitance	C_{ob}	—	1.6	—	pF	$V_{CB} = -10\text{V}, I_E = 0,$ $f = 1\text{MHz}$

Notes:

- No purposefully added lead.
- Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- Device mounted on FR-4 PCB with minimum recommended pad layout.
- Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%

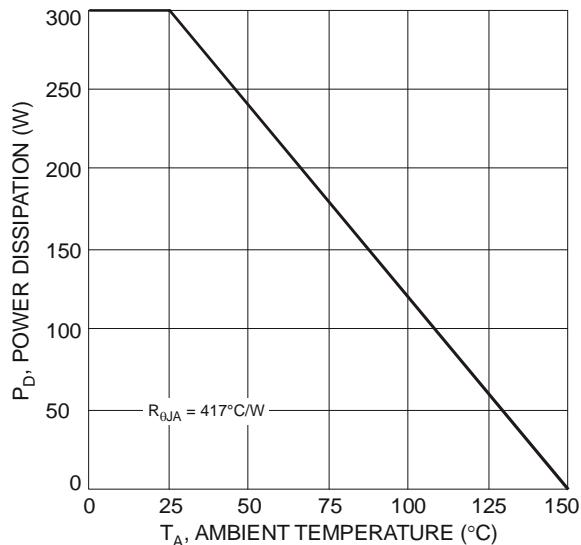


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

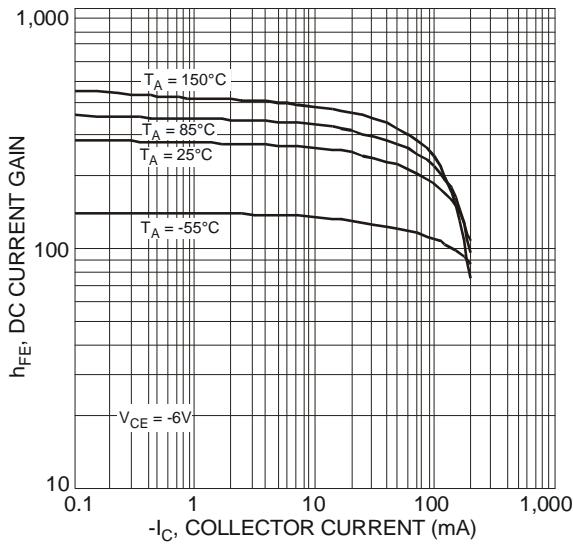


Fig. 3 Typical DC Current Gain vs. Collector Current (DN0150BDJ)

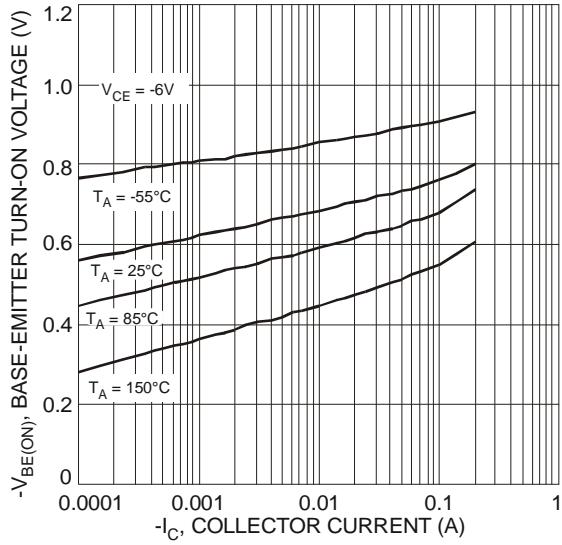


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

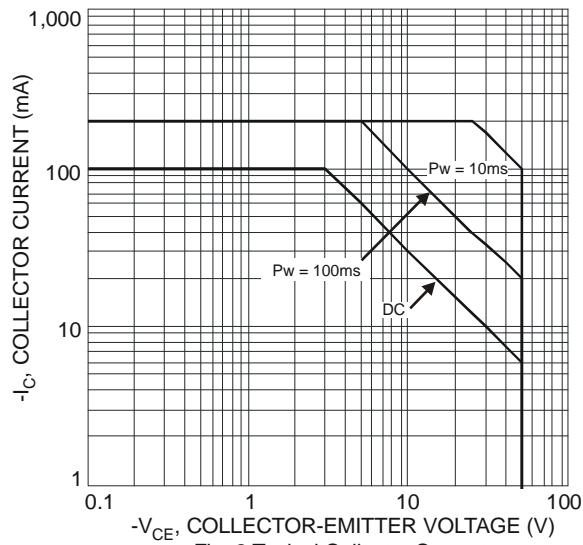


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage (Note 3)

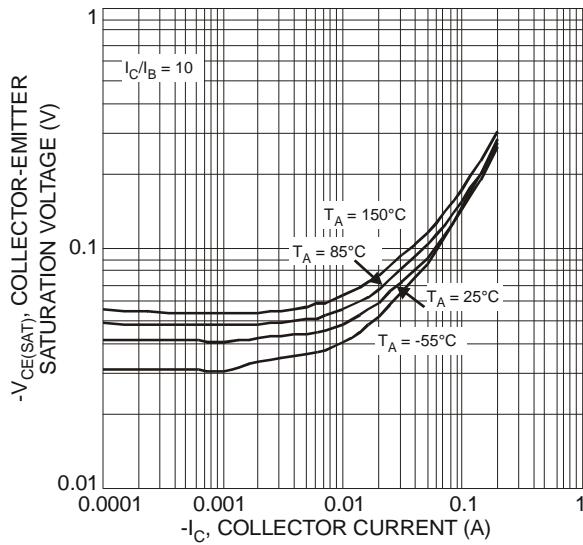


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

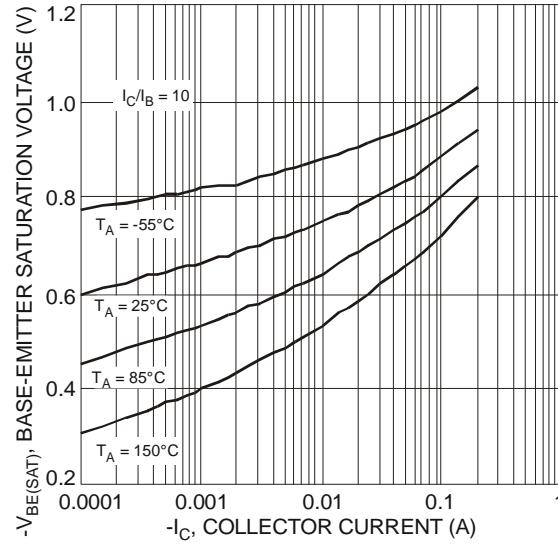


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

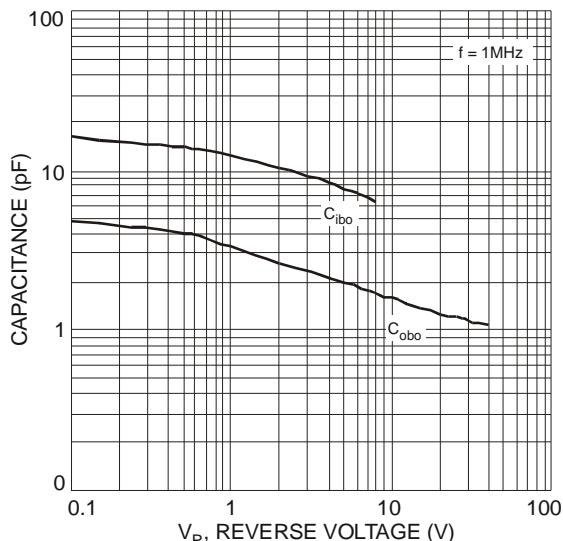


Fig. 7 Typical Capacitance Characteristics

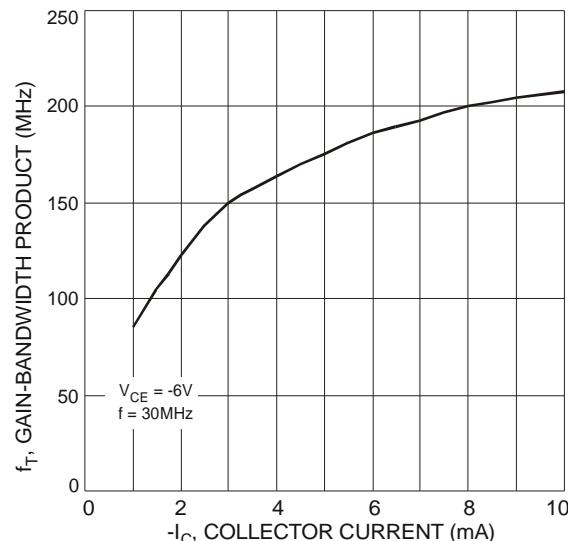


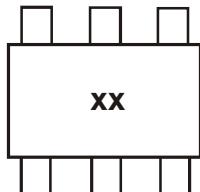
Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 5)

Device	Packaging	Shipping
DP0150ADJ-7	SOT-963	10,000/Tape & Reel
DP0150BDJ-7	SOT-963	10,000/Tape & Reel

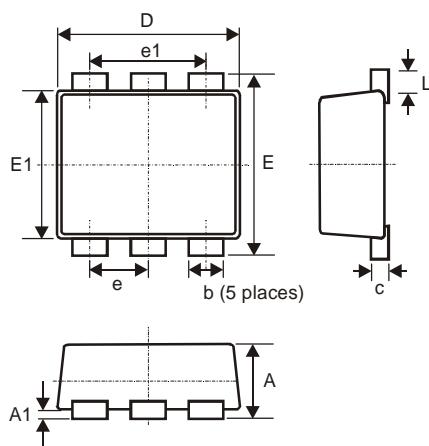
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



xx= Product Type Marking Code:
T5 = DP0150ADJ
T6 = DP0150BDJ

Package Outline Dimensions



SOT-963			
Dim	Min	Max	Typ
A	0.40	0.50	0.45
A1	0	0.05	-
c	0.077	0.177	0.127
D	0.95	1.05	1.00
E	0.95	1.05	1.00
E1	0.75	0.85	0.80
L	0.05	0.15	0.10
b	0.10	0.20	0.15
e	0.35 Typ		
e1	0.70 Typ		
All Dimensions in mm			

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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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