



DN0150ADJ / DN0150BDJ

DUAL NPN SURFACE MOUNT TRANSISTOR

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

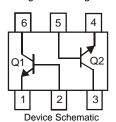
Mechanical Data

- 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)

SOT-963



Top View



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}	50	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current – Continuous	Ic	100	mA
Base Current	lΒ	30	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	P_{D}	300	mW
Thermal Resistance, Junction to Ambient (Note 3)	$R_{ hetaJA}$	417	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

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Characteris		Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Collector-Base Breakdown Voltage		V(_{BR)CBO}	60	_	_	V	$I_C = 10\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	ge	V(_{BR)CEO}	50	_	_	V	$I_{C} = 1 \text{mA}, I_{B} = 0$
Emitter-Base Breakdown Voltage		V(_{BR)EBO}	5	_	_	V	$I_E = 10 \mu A, I_C = 0$
Collector Cut-Off Current		I _{CBO}	_	_	0.1	μΑ	$V_{CB} = 60V, I_{E} = 0$
Emitter Cut-Off Current		I _{EBO}	_	_	0.1	μΑ	$V_{EB} = 5V, I_{C} = 0$
ON CHARACTERISTICS (Note 4)							
Collector-Emitter Saturation Voltag	e	V _{CE(SAT)}	_	0.10	0.25	V	$I_C = 100 \text{mA}, I_B = 10 \text{mA}$
DC Current Gain	DN0150ADJ		120	_	240		$V_{CF} = 6V, I_{C} = 2mA$
	DN0150BDJ	LIFE	h _{FE} 200	_	400		VCE = OV, IC = ZIIIA
SMALL SIGNAL CHARACTERIST	TCS						
Transition Frequency		f _T	60	_	_	MHz	$V_{CE} = 10V$, $I_E = -1mA$ f = 30MHz
Output Capactiance		C _{ob}	_	1.3	_	pF	$V_{CB} = 10V, I_{E} = 0,$ f = 1MHz

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.
- Device mounted on FR-4 PCB with minimum recommended pad layout.
- 4. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤2%



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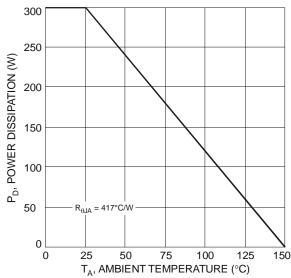
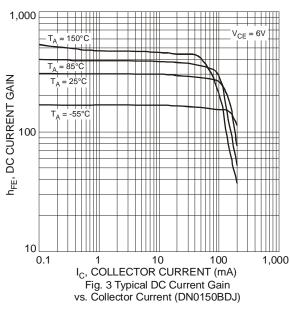
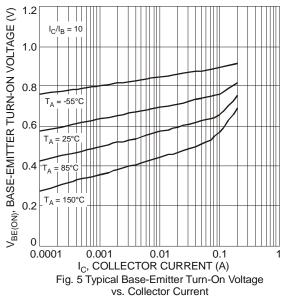
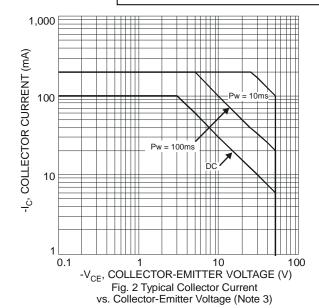
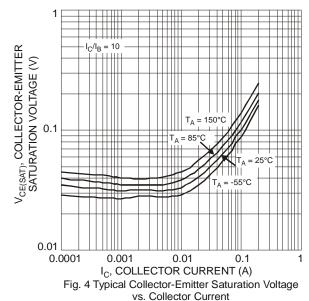


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)







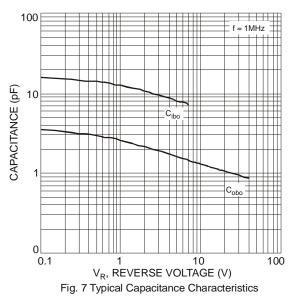


1.2 WCE = 6V VCE = 6V V

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

DIODES

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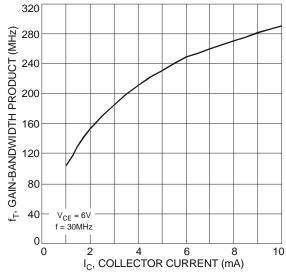


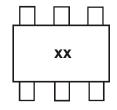
Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 5)

Device	Packaging	Shipping
DN0150ADJ-7	SOT-963	10,000/Tape & Reel
DN0150BDJ-7	SOT-963	10,000/Tape & Reel

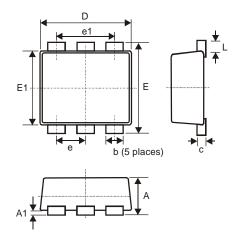
Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



xx= Product Type Marking Code: T3 = DN0150ADJ T4 = DN0150BDJ

Package Outline Dimensions



SOT-963					
Dim	Min	Max	Тур		
Α	0.40	0.50	0.45		
A1	0	0.05	-		
С	0.077	0.177	0.127		
D	0.95	1.05	1.00		
Е	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		
е	0.35 Typ				
e1	0.70 Typ				
All Dimensions in mm					



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