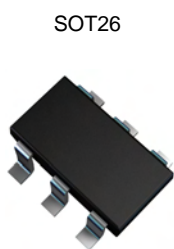


**80V DUAL NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR**
**Features & Benefits**

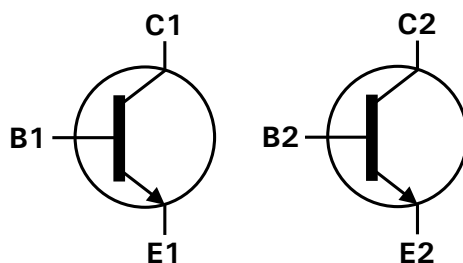
- $BV_{CEO} > 80V$
- $I_{CM} = 1A$  Peak Pulse Current
- General purpose NPN transistors ideally suited for low power amplification and switching applications
- Dual transistors in a single SOT26 package taking half the footprint of two equivalent transistors in SOT23
- Epitaxial planar die construction
- "Lead Free", RoHS Compliant (Note 1)
- Halogen and Antimony Free. "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

**Mechanical Data**

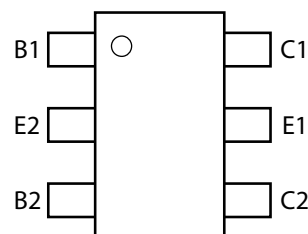
- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating: Matte Tin Finish annealed over Copper leadframe
- Weight: 0.015 grams (approximate)



Top View



Device Symbol

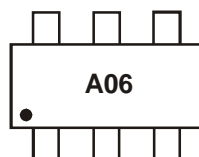


Top View Pin-Out

**Ordering Information** (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
MMDTA06-7	A06	7	8	3,000

- Notes:
1. No purposefully added lead.
  2. Diodes Inc's "Green" Policy can be found on our website at <http://www.diodes.com>
  3. For packaging details, go to our website at <http://www.diodes.com>

**Marking Information**


A06 = Product Type Marking Code

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

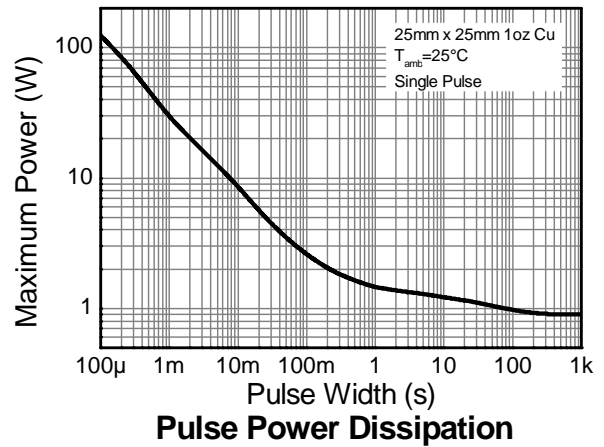
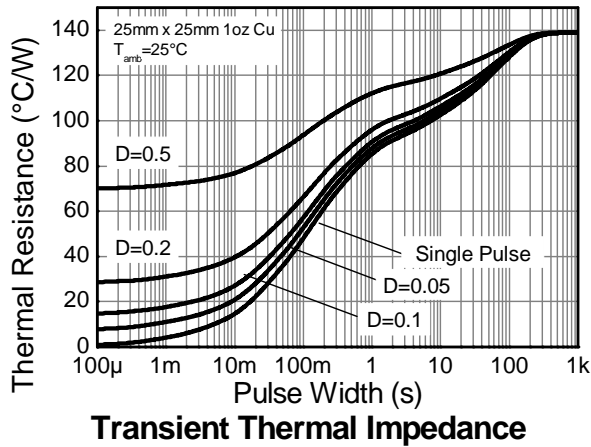
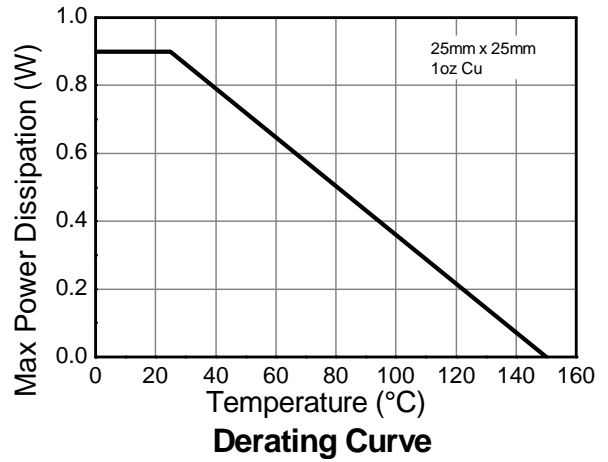
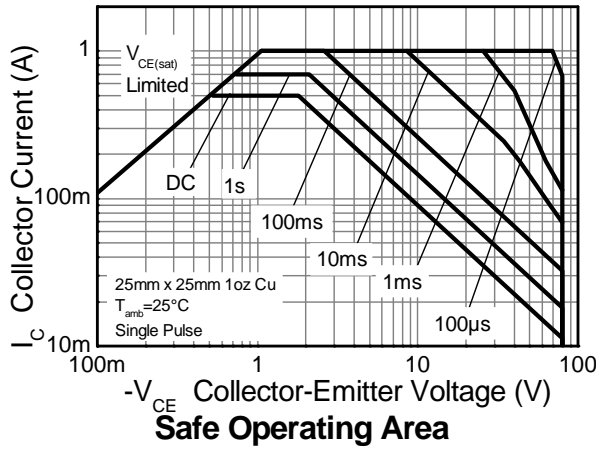
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	80	V
Collector-Emitter Voltage	V <sub>CEO</sub>	80	V
Emitter-Base Voltage	V <sub>EBO</sub>	4	V
Continuous Collector Current	I <sub>C</sub>	500	mA
Peak Pulse Collector Current	I <sub>CM</sub>	1	A

**Thermal Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation Linear Derating Factor	P <sub>D</sub>	1.28	W
		10.3	
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	0.90	mW/°C
		7.14	
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	97	°C/W
		140	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

- Notes:
4. For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
  5. Same as note (4), except the device is measured at t ≤ 5 sec.
  6. For a dual device with one active die.
  7. Thermal resistance from junction to solder-point (at the end of the collector lead).

**Thermal Characteristics**

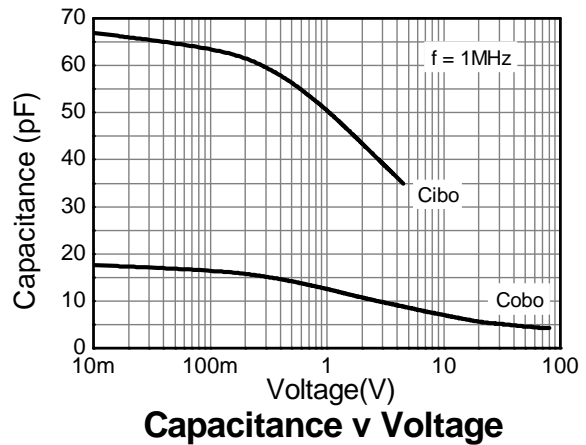
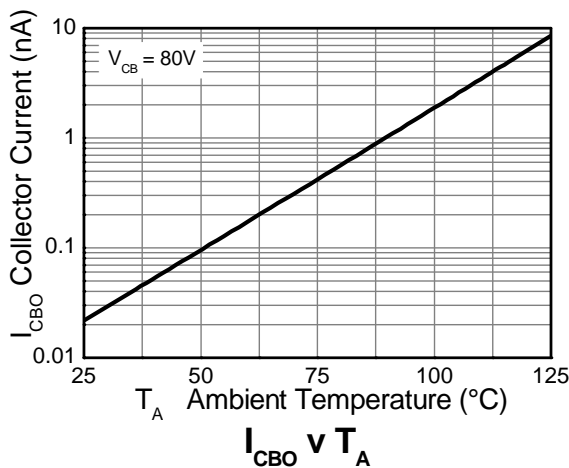
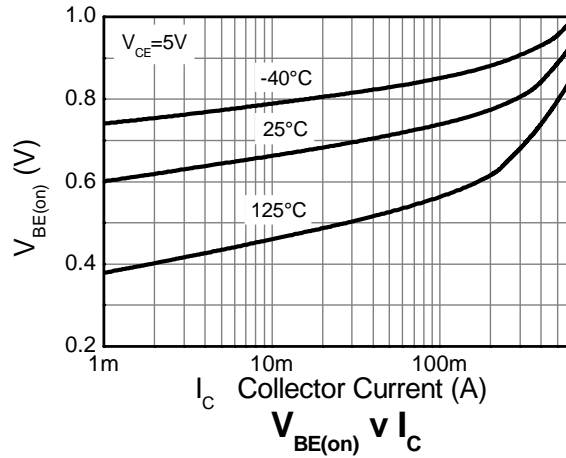
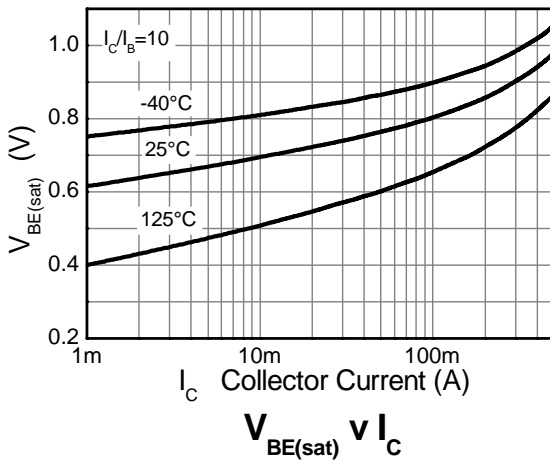
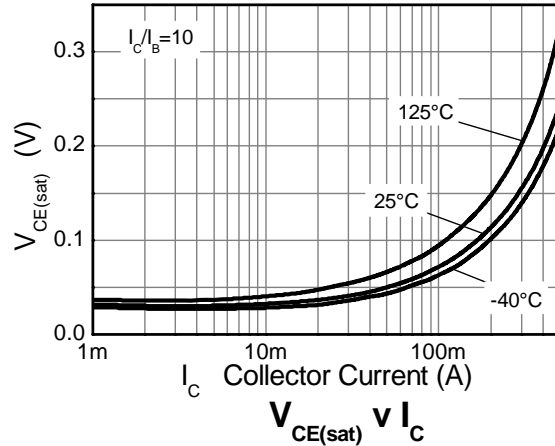
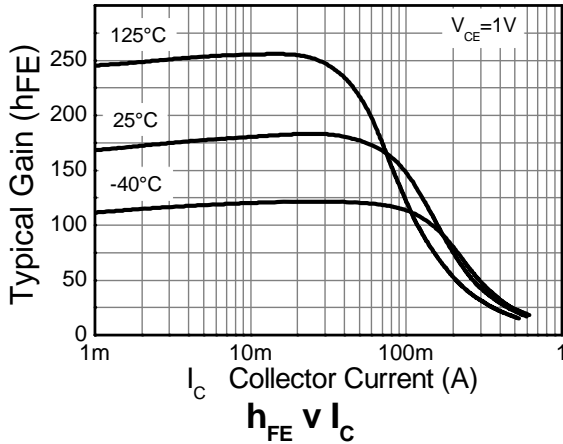


**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

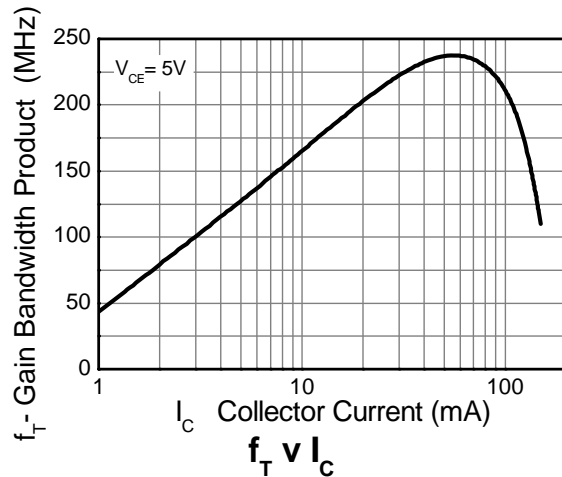
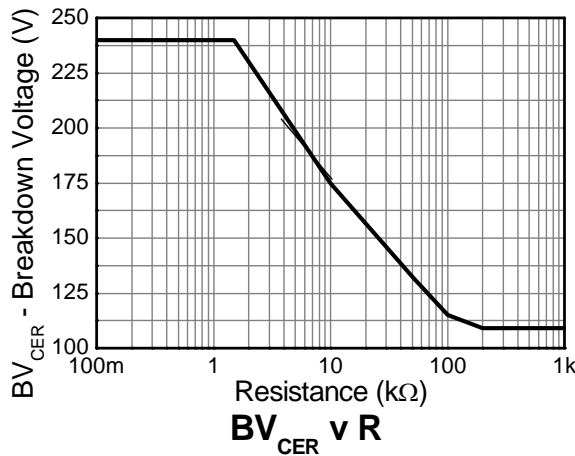
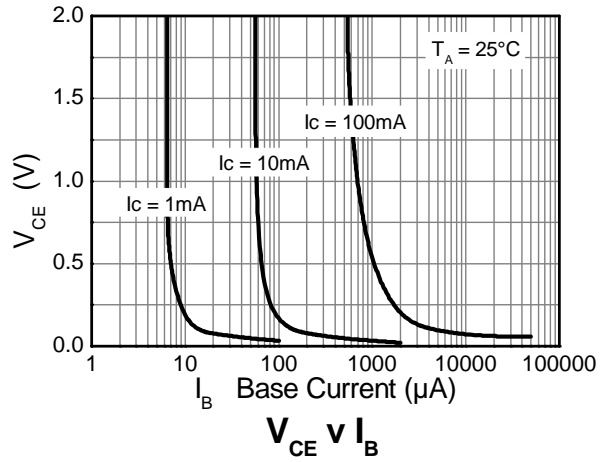
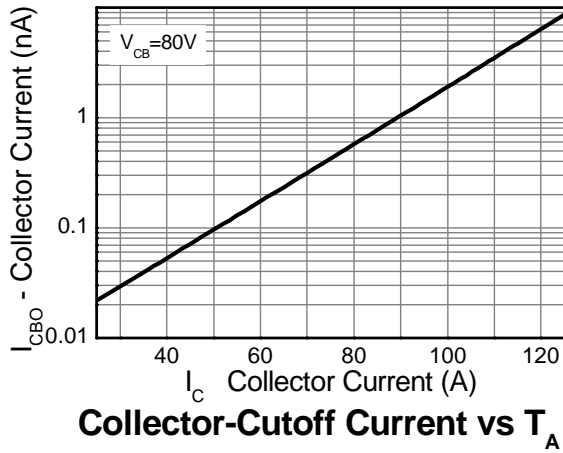
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS</b>						
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	80	—	—	V	I <sub>C</sub> = 100μA, I <sub>E</sub> = 0
Collector-Emitter Breakdown Voltage (Note 8)	BV <sub>CEO</sub>	80	—	—	V	I <sub>C</sub> = 1mA, I <sub>B</sub> = 0
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	4	—	—	V	I <sub>E</sub> = 100μA, I <sub>C</sub> = 0
Collector-Base Cutoff Current	I <sub>CBO</sub>	—	—	100	nA	V <sub>CB</sub> = 80V, I <sub>E</sub> = 0
Collector-Emitter Cutoff Current	I <sub>CES</sub>	—	—	100	nA	V <sub>CE</sub> = 60V, I <sub>B</sub> = 0
<b>ON CHARACTERISTICS (Note 8)</b>						
DC Current Gain	h <sub>FE</sub>	100	—	—	—	I <sub>C</sub> = 10mA, V <sub>CE</sub> = 1V
		100	—	—		I <sub>C</sub> = 100mA, V <sub>CE</sub> = 1V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	—	—	0.25	V	I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA
Base-Emitter Turn-On Voltage	V <sub>BE(on)</sub>	—	—	1.20	V	I <sub>C</sub> = 100mA, V <sub>CE</sub> = 1V
<b>SMALL SIGNAL CHARACTERISTICS</b>						
Current Gain-Bandwidth Product	f <sub>T</sub>	100	163	—	MHz	V <sub>CE</sub> = 2V, I <sub>C</sub> = 10mA, f = 100MHz
Output Capacitance	C <sub>obo</sub>	—	7	—	pF	V <sub>CB</sub> = 10V, f = 1MHz

Note: 8. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

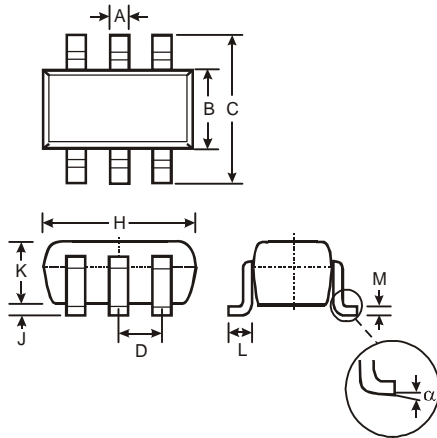
**Typical Electrical Characteristics**



**Typical Electrical Characteristics - Continued**

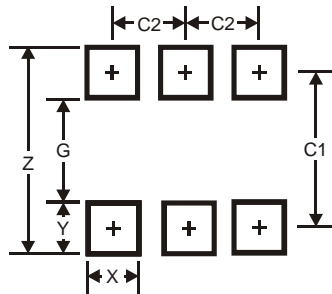


**Package Outline Dimensions**



SOT26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
$\alpha$	0°	8°	—
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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