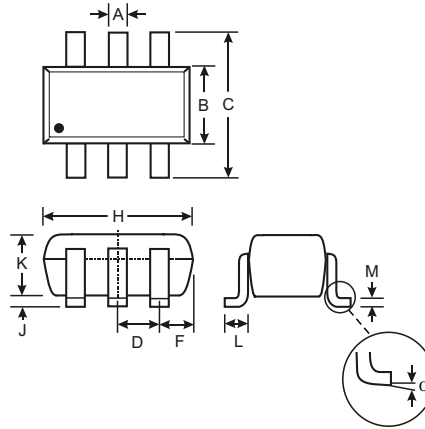


### Features

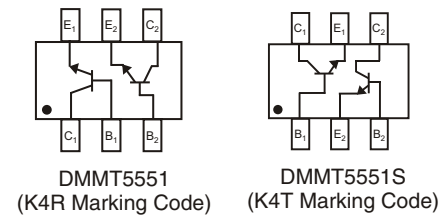
- Epitaxial Planar Die Construction
- Complementary PNP Type Available (DMMT5401)
- Ideal for Medium Power Amplification and Switching
- Intrinsically Matched NPN Pair (Note 1)
- 2% Matched Tolerance,  $h_{FE}$ ,  $V_{CE(SAT)}$ ,  $V_{BE(SAT)}$
- 1% Matched Tolerance, Available (Note 2)
- Available in Lead Free/RoHS Compliant Version (Note 5)

### Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Copper leadframe). Please see Ordering Information, Note 9, on Page 2
- Marking (See Page 2): K4R & K4T
- Ordering & Date Code Information: See Page 2
- Weight: 0.006 grams (approx.)



SOT-26			
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
F	—	—	0.55
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			



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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	180	V
Collector-Emitter Voltage	$V_{CE0}$	160	V
Emitter-Base Voltage	$V_{EB0}$	6.0	V
Collector Current - Continuous (Note 3)	$I_C$	200	mA
Power Dissipation (Note 3, 4)	$P_d$	300	mW
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	417	K/W
Operating and Storage and Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Notes:
1. Built with adjacent die from a single wafer.
  2. Contact the Diodes, Inc. Sales department.
  3. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  4. Maximum combined dissipation.
  5. No purposefully added lead.

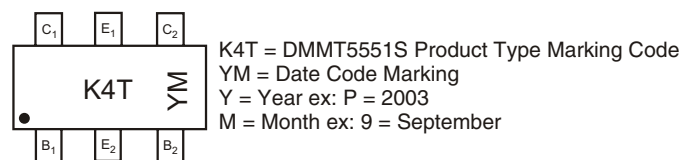
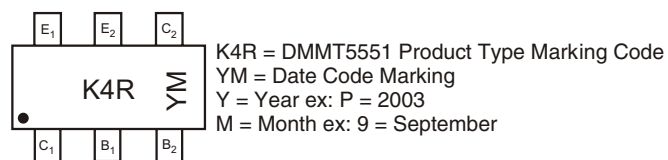
**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 6)</b>					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	180	—	V	$I_C = 100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	160	—	V	$I_C = 1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6.0	—	V	$I_E = 10\mu\text{A}, I_C = 0$
Collector Cutoff Current	$I_{CBO}$	—	50	nA	$V_{CB} = 120\text{V}, I_E = 0$ $V_{CB} = 120\text{V}, I_E = 0, T_A = 100^\circ\text{C}$
Emitter Cutoff Current	$I_{EBO}$	—	50	nA	$V_{EB} = 4.0\text{V}, I_C = 0$
<b>ON CHARACTERISTICS (Note 6)</b>					
DC Current Gain (Note 7)	$h_{FE}$	80 80 30	— 250 —	—	$I_C = 1.0\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 50\text{mA}, V_{CE} = 5.0\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	0.15 0.20	V	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$ $I_C = 50\text{mA}, I_B = 5.0\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	1.0	V	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$ $I_C = 50\text{mA}, I_B = 5.0\text{mA}$
<b>SMALL SIGNAL CHARACTERISTICS</b>					
Output Capacitance	$C_{obo}$	—	6.0	pF	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}, I_E = 0$
Small Signal Current Gain	$h_{FE}$	50	250	—	$V_{CE} = 10\text{V}, I_C = 1.0\text{mA},$ $f = 1.0\text{kHz}$
Current Gain-Bandwidth Product	$f_T$	100	300	MHz	$V_{CE} = 10\text{V}, I_C = 10\text{mA},$ $f = 100\text{MHz}$
Noise Figure	NF	—	8.0	dB	$V_{CE} = 5.0\text{V}, I_C = 200\mu\text{A},$ $R_S = 1.0\text{k}\Omega, f = 1.0\text{kHz}$

**Ordering Information** (Note 8)

Device	Packaging	Shipping
DMMT5551-7	SOT-26	3000/Tape & Reel
DMMT5551S-7	SOT-26	3000/Tape & Reel

- Notes:
- Short duration test pulse used to minimize self-heating effect.
  - The DC Current Gain,  $h_{FE}$ , (matched at  $I_C = 10\text{mA}$  and  $V_{CE} = 5\text{V}$ ) Collector Emitter Saturation Voltage,  $V_{CE(SAT)}$ , and Base Emitter Saturation Voltage,  $V_{BE(SAT)}$  are matched with typical matched tolerances of 1% and maximum of 2%.
  - For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  - For Lead Free/RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: DMMT5551-7-F.

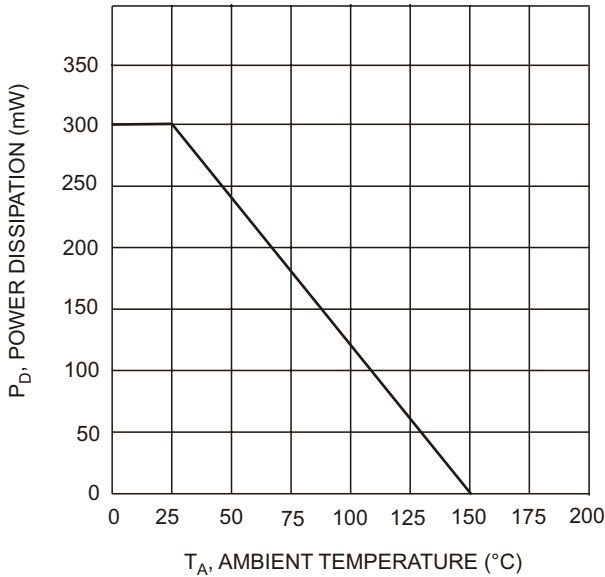
**Marking Information**


## Date Code Key

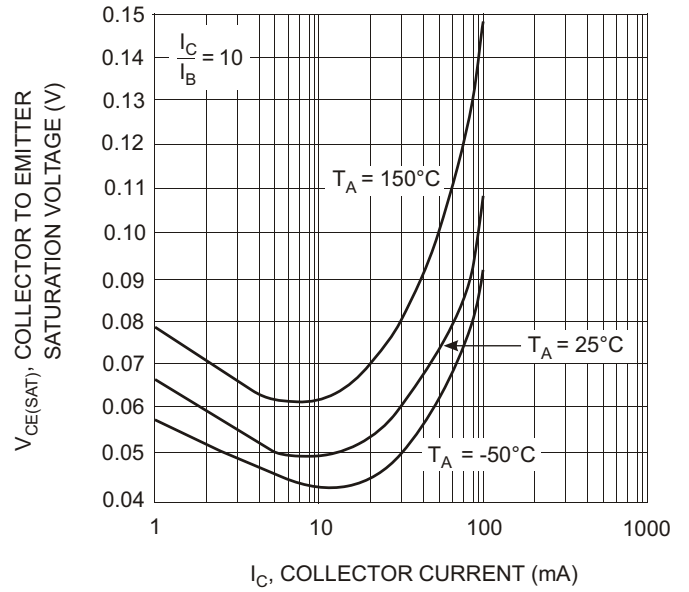
Year	2003	2004	2005	2006	2007	2008	2009
Code	P	R	S	T	U	V	W

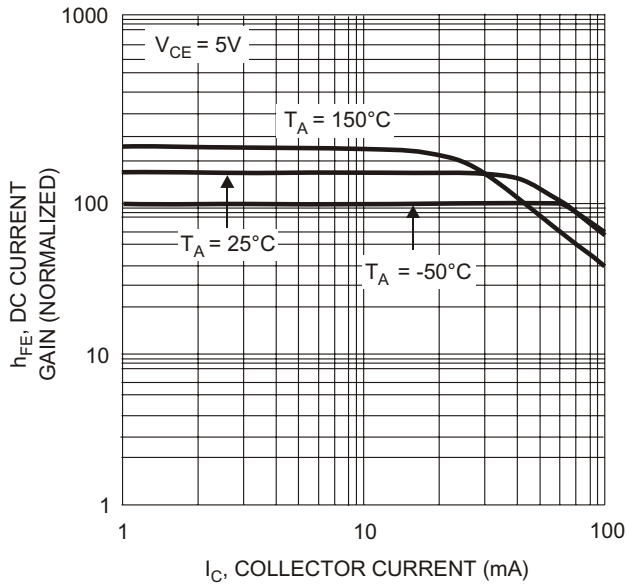
Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D



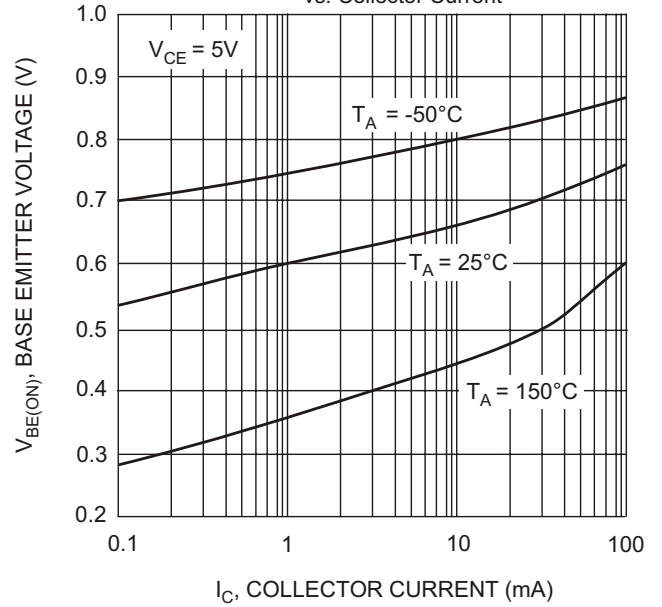
$T_A$ , AMBIENT TEMPERATURE (°C)  
Fig. 1, Max Power Dissipation vs Ambient Temperature



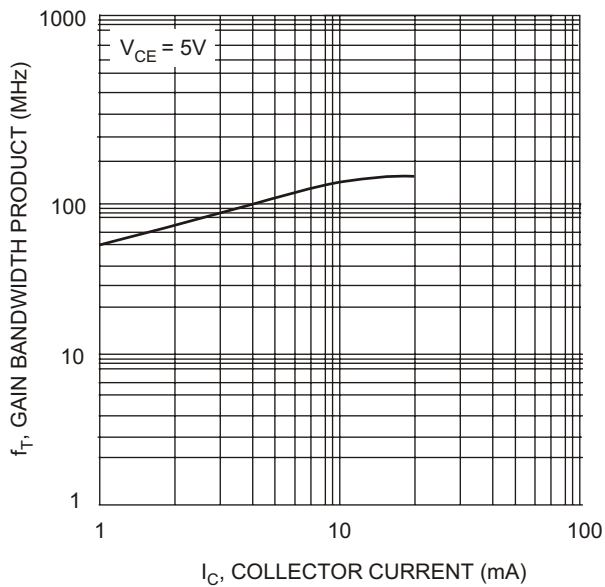
$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 3, DC Current Gain vs Collector Current



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 4, Base Emitter Voltage vs. Collector Current



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 5, Gain Bandwidth Product vs. Collector Current