



MMDTA42

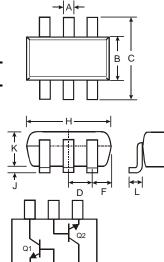
DUAL NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- Lead Free/RoHS Compliant (Note 3)
- "Green" Device, Note 4 and 5

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Finish Matte Tin Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Copper leadframe).
- Marking Information: K3M, See Page 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.008 grams (approximate)



SOT-26								
Dim	Min	Max	Тур					
Α	0.35	0.50	0.38					
В	1.50	1.70	1.60					
С	2.70	3.00	2.80					
D	_	_	0.95					
F	_	_	0.55					
н	2.90	3.10	3.00					
J	0.013	0.10	0.05					
К	1.00	1.00 1.30						
L	0.35	0.55	0.40					
М	0.10	0.20	0.15					
α	0°	8°						
All Dimensions in mm								

Characteristic	Symbol	Value	Unit		
Collector-Base Voltage	V _{CBO}	300	V		
Collector-Emitter Voltage	V _{CEO}	300	V		
Emitter-Base Voltage	V _{EBO}	6.0	V		
Collector Current (Note 1) (Note 2)	lc	500	mA		
Power Dissipation (Note 1)	Pd	300	mW		
Thermal Resistance, Junction to Ambient (Note 1)	R _{0JA}	417	°C/W		
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +150	°C		

Notes: 1. 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.

 When operated under collector-emitter saturation conditions within the safe operating area defined by the thermal resistance rating (R_{BJA}), power dissipation rating (P_d) and power derating curve (Figure 1).

3. No purposefully added lead.

4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

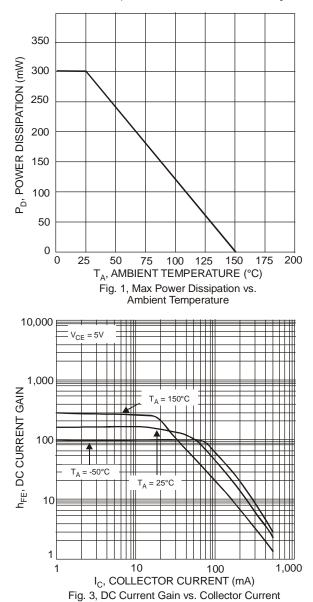
5. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

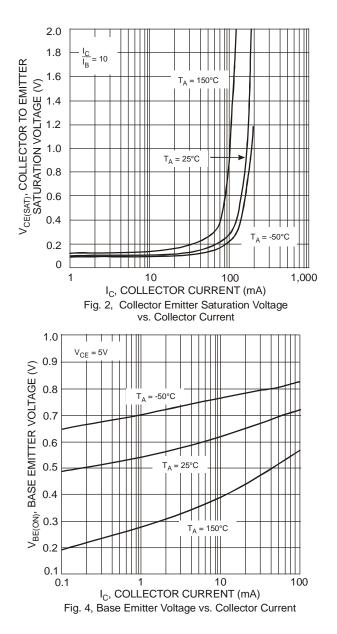


Electrical Characteristics @T_A = 25°C unless otherwise specified

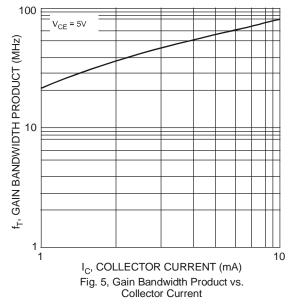
Characteristic	Symbol	Min	Max	Unit	Test Condition				
OFF CHARACTERISTICS (Note 6)									
Collector-Base Breakdown Voltage	V _{(BR)CBO}	300	_	V	$I_{C} = 100 \mu A, I_{E} = 0$				
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	_	V	$I_{\rm C} = 1.0 {\rm mA}, I_{\rm B} = 0$				
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6.0	_	V	$I_{\rm E} = 100 \mu A, I_{\rm C} = 0$				
Collector Cutoff Current	I _{CBO}	_	100	nA	$V_{CB} = 200V, I_E = 0$				
Collector Cutoff Current	I _{EBO}		100	nA	$V_{CE} = 6.0V, I_{C} = 0$				
ON CHARACTERISTICS (Note 6)					·				
DC Current Gain	hfe	25 40 40	_	_	$I_{C} = 1.0mA, V_{CE} = 10V$ $I_{C} = 10mA, V_{CE} = 10V$ $I_{C} = 30mA, V_{CE} = 10V$				
Collector-Emitter Saturation Voltage	V _{CE(SAT)}		0.5	V	$I_{\rm C} = 20$ mA, $I_{\rm B} = 2.0$ mA				
Base-Emitter Saturation Voltage	V _{BE(SAT)}		0.9	V	$I_{\rm C} = 20 {\rm mA}, I_{\rm B} = 2.0 {\rm mA}$				
SMALL SIGNAL CHARACTERISTICS									
Output Capacitance	C _{cb}	_	3.0	pF	$V_{CB} = 20V, f = 1.0MHz, I_E = 0$				
Current Gain-Bandwidth Product	f _T	50		MHz	$V_{CE} = 20V, I_C = 10mA, f = 100MHz$				

Notes: 6. Short duration pulse test used to minimize self-heating effect.







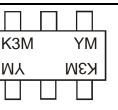


Ordering Information (Note 5 & 7)

Device	Packaging	Shipping		
MMDTA42-7-F	SOT-26	3000/Tape & Reel		

Notes: 7. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



 $\begin{array}{l} \text{K3M} = \text{Product Type Marking Code} \\ \text{YM} = \text{Date Code Marking} \\ \text{Y} = \text{Year ex: P} = 2003 \\ \text{M} = \text{Month ex: 9} = \text{September} \end{array}$

Date Code Key												
Year	2004	20	005	2006	2007	20	08	2009	2010	20	11	2012
Code	R	:	S	Т	U	Ň	/	W	Х	`	Y	Z
				•	•							
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.