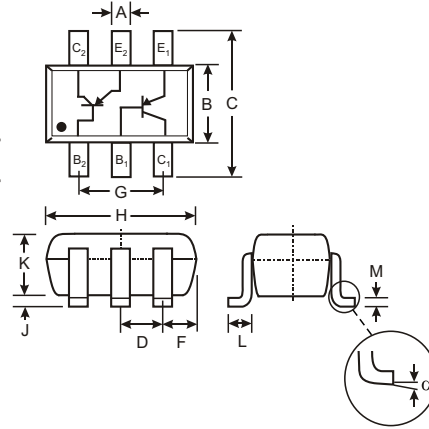


Features

- Epitaxial Planar Die Construction
- Intrinsically Matched PNP Pair (Note 1)
- Small Surface Mount Package
- 2% Matched Tolerance, h_{FE} , $V_{CE(SAT)}$, $V_{BE(SAT)}$
- Lead Free/RoHS Compliant (Note 2)**
- Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Marking (See Below): K4B
- Ordering & Date Code Information: See Below
- Weight: 0.015 grams (approximate)



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J		0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
	8°	
All Dimensions in mm		

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

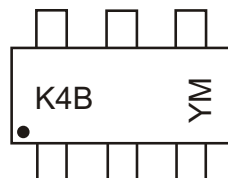
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-200	mA
Power Dissipation (Note 3)	P_d	200	mW
Thermal Resistance, Junction to Ambient (Note 3)	R_{JA}	625	C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	C

Ordering Information (Note 4)

Device	Packaging	Shipping
DMMT3906W-7-F	SOT-363	3000/Tape & Reel

- Notes:
- Built with adjacent die from a single wafer.
 - No purposefully added lead.
 - Device mounted on FR5 PCB: 1.0 x 0.75 x 0.62 in.; pad layout as shown on suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 - For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



K4B = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: T = 2006
 M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	N	P	R	S	T	U	V	W	X	Y	Z

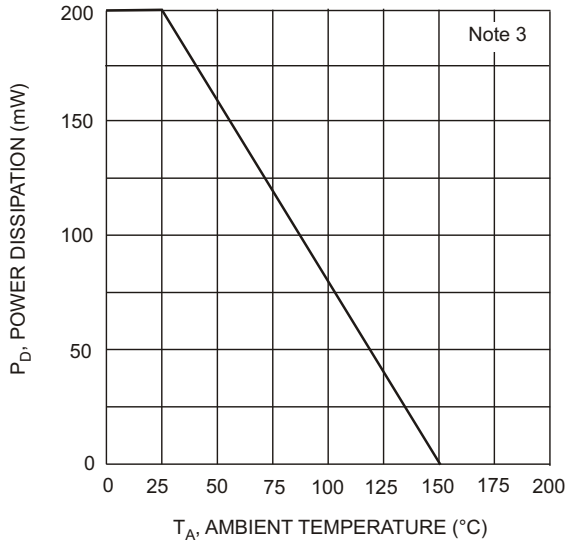
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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

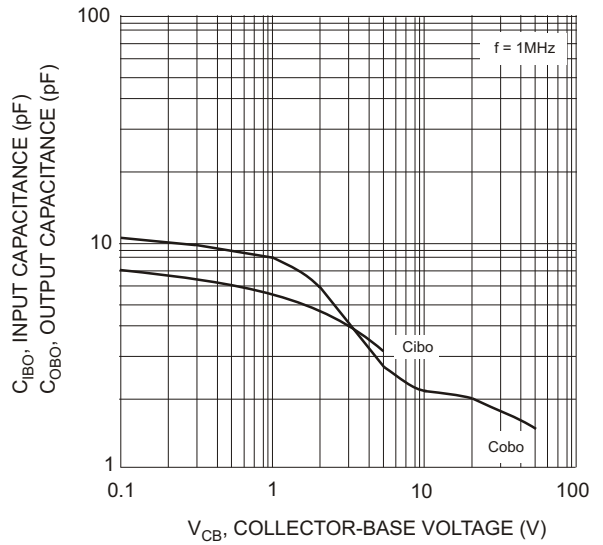
Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-40		V	$I_C = -10\text{ A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-40		V	$I_C = -1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5.0		V	$I_E = -10\text{ A}, I_C = 0$
Collector Cutoff Current	I_{CEX}		-50	nA	$V_{CE} = -30\text{V}, V_{EB(OFF)} = -3.0\text{V}$
Base Cutoff Current	I_{BL}		-50	nA	$V_{CE} = -30\text{V}, V_{EB(OFF)} = -3.0\text{V}$
ON CHARACTERISTICS (Note 5)					
DC Current Gain (Note 6)	h_{FE}	60 80 100 60 30	300		$I_C = -100\mu\text{A}, V_{CE} = -1.0\text{V}$ $I_C = -1.0\text{mA}, V_{CE} = -1.0\text{V}$ $I_C = -10\text{mA}, V_{CE} = -1.0\text{V}$ $I_C = -50\text{mA}, V_{CE} = -1.0\text{V}$ $I_C = -100\text{mA}, V_{CE} = -1.0\text{V}$
Collector-Emitter Saturation Voltage (Note 6)	$V_{CE(SAT)}$		-0.25 -0.40	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 (Note 6)	$V_{BE(SAT)}$	-0.65	-0.85 -0.95	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 Voltage Matching	V_{BE}		-1	mV	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}		4.5	pF	$V_{CB} = -5.0\text{V}, f = 1.0\text{MHz}, I_E = 0$
Input Capacitance	C_{ibo}		10	pF	$V_{EB} = -0.5\text{V}, f = 1.0\text{MHz}, I_C = 0$
Input Impedance	h_{ie}	2.0	12	k	$V_{CE} = 10\text{V}, I_C = 1.0\text{mA}, f = 1.0\text{kHz}$
Voltage Feedback Ratio	h_{re}	0.1	10	$\times 10^{-4}$	
Small Signal Current Gain	h_{fe}	100	400		
Output Admittance	h_{oe}	3.0	60	S	
Current Gain-Bandwidth Product	f_T	250		MHz	
Noise Figure	NF		4.0	dB	$V_{CE} = -5.0\text{V}, I_C = -100\text{ A}, R_S = 1.0\text{k} \quad f = 1.0\text{kHz}$
SWITCHING CHARACTERISTICS					
Delay Time	t_d		35	ns	$V_{CC} = -3.0\text{V}, I_C = -10\text{mA}, V_{BE(off)} = 0.5\text{V}, I_{B1} = -1.0\text{mA}$
Rise Time	t_r		35	ns	
Storage Time	t_s		225	ns	$V_{CC} = -3.0\text{V}, I_C = -10\text{mA}, I_{B1} = I_{B2} = -1.0\text{mA}$
Fall Time	t_f		75	ns	

Notes: 5. Short duration pulse test used to minimize self-heating effect.

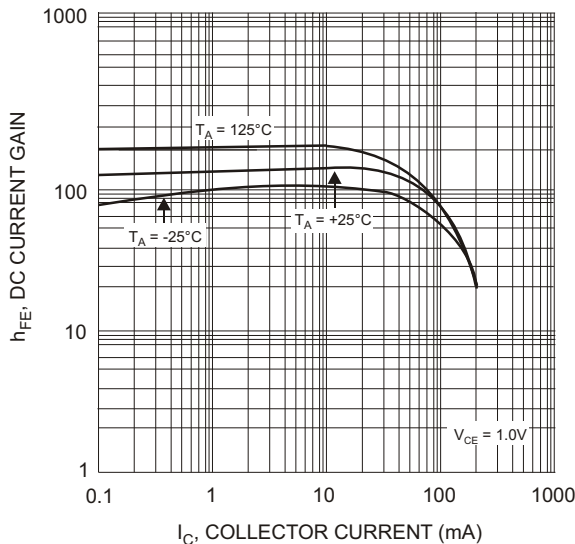
6. The DC current gain, h_{FE} , (matched at $I_C = -10\text{mA}$ and $V_{CE} = -1.0\text{V}$) Collector-Emitter Saturation Voltage, $V_{CE(sat)}$, and Base-Emitter Saturation Voltage, $V_{BE(sat)}$ are matched with typical matched tolerances of 1% and maximum of 2%.



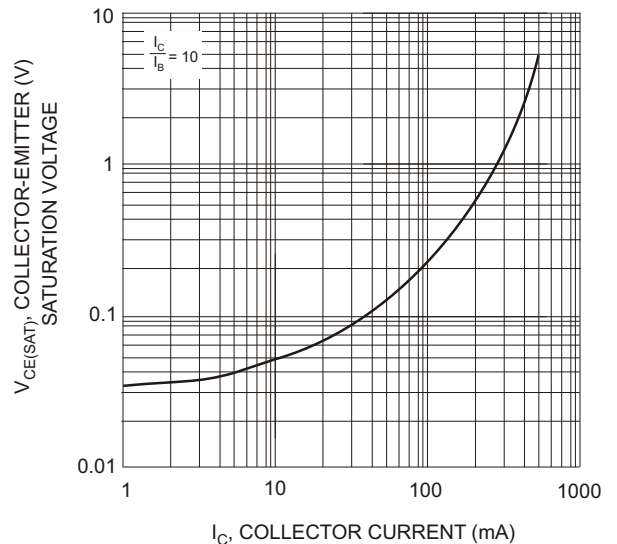
T_A , AMBIENT TEMPERATURE (°C)
Fig. 1, Max Power Dissipation vs Ambient Temperature



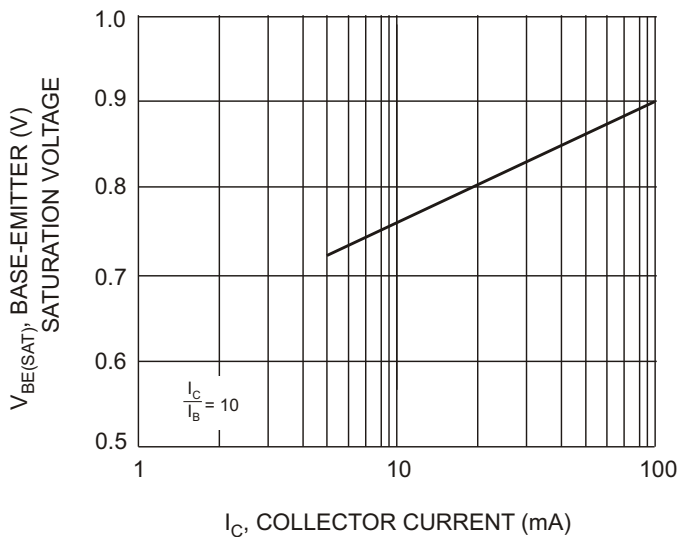
V_{CB} , COLLECTOR-BASE VOLTAGE (V)
Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage



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



I_C , COLLECTOR CURRENT (mA)
Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current



I_C , COLLECTOR CURRENT (mA)
Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current

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.