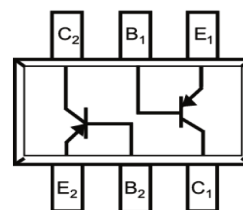


# Dual PNP Small Signal Surface Mount Transistor



## Features:

- Epitaxial planar die construction.
- Ideal for low power amplification and switching.
- Ultra-small surface mount package
- Also available in lead free version.



SOT-363

## Application:

- General switching and amplification

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-40	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current -Continuous	$I_C$	-0.2	A
Total Power Dissipation	$P_{tot}$	-0.2	W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Storage Temperature	$T_{stg}$	150	$^{\circ}\text{C}$
Junction Temperature	$T_j$	-55 to -150	$^{\circ}\text{C}$

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

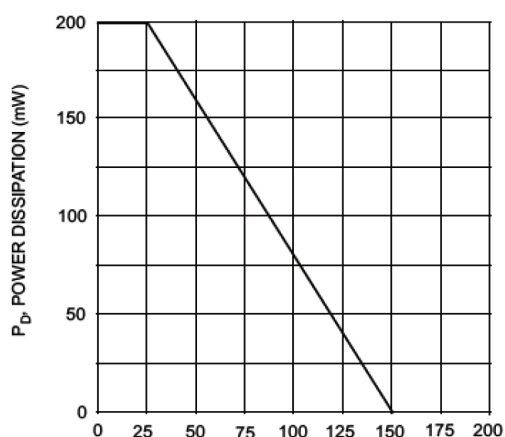
Parameter	Symbol	Conditions	Min.	Max.	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5		V
Collector cut-off current	$I_{CEX}$	$V_{CE} = -30\text{V}, V_{EB(OFF)} = -3\text{V}$	-	-0.05	$\mu\text{A}$
Base cut-off current	$I_{BL}$	$V_{CE} = -30\text{V}, V_{EB(OFF)} = -3\text{V}$	-	-0.05	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = -1\text{V}, I_C = -0.1\text{mA}$	60	-	
		$V_{CE} = -1\text{V}, I_C = -1\text{mA}$	80	-	
		$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	100	300	
		$V_{CE} = -1\text{V}, I_C = -50\text{mA}$	60	-	
		$V_{CE} = -1\text{V}, I_C = -100\text{mA}$	30	-	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$	-	-250	mV
		$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-400	mV
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$	-650	-850	mV
		$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-950	mV

# Dual PNP Small Signal Surface Mount Transistor

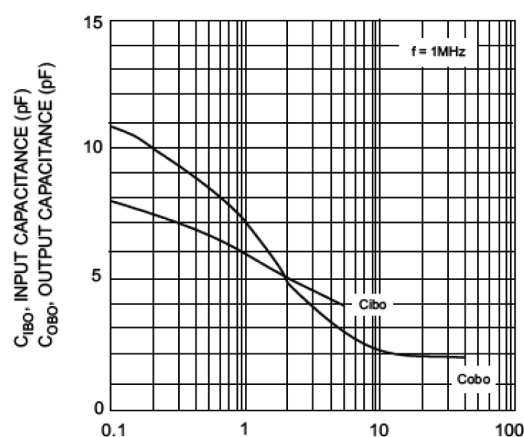


Parameter	Symbol	Conditions	Min.	Max.	Unit
Output Capacitance	$C_{obo}$	$I_E = 0, V_{CB} = -5V; f = 1MHz$	-	4.5	pF
Input Capacitance	$C_{ibo}$	$I_C = 0, V_{EB} = -0.5V; f = 1MHz$	-	10	pF
Transition Frequency	$f_T$	$I_C = -1mA, V_{CE} = -10V, f = 1KHz$	250	-	MHz
Noise Figure	NF	$I_C = -0.1mA, V_{CE} = -20V, f = 100MHz$	-	4	dB
Delay Time	$t_d$	$V_{CC} = -3V, V_{BE(OFF)} = 0.5V, I_C = -10mA$ $I_{B1} = -I_{B2} = -1mA$	-	35	ns
Rise Time	$t_r$		-	35	ns
Storage Time	$t_s$	$V_{CC} = -3V, I_C = -10mA$ $I_{B1} = -I_{B2} = -1mA$	-	225	ns
Fall Time	$t_f$		-	75	ns

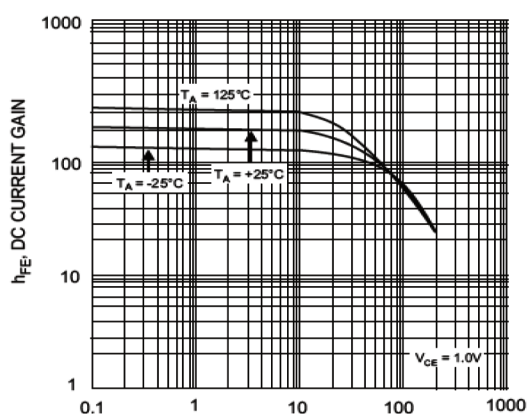
## Typical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified



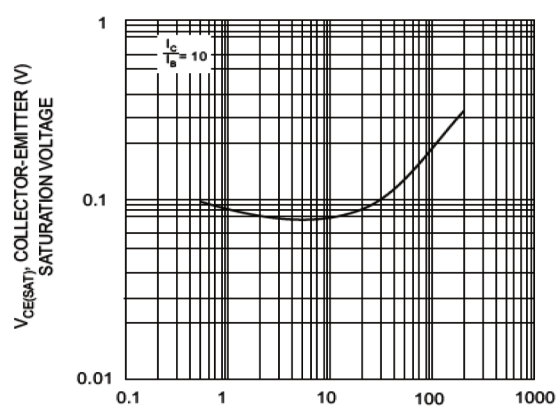
$T_A$ , AMBIENT TEMPERATURE ( $^\circ C$ )  
Fig. 1, Max Power Dissipation vs  
Ambient Temperature



$V_{CB}$ , 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

# Dual PNP Small Signal Surface Mount Transistor

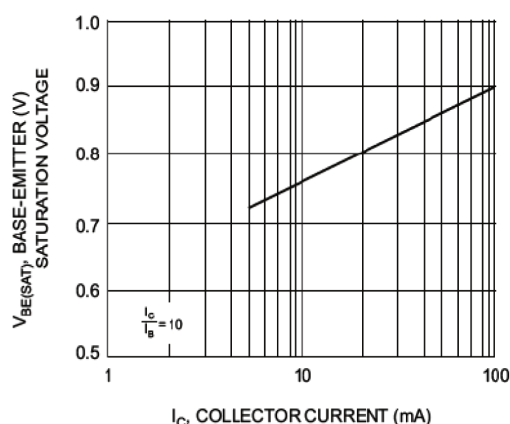
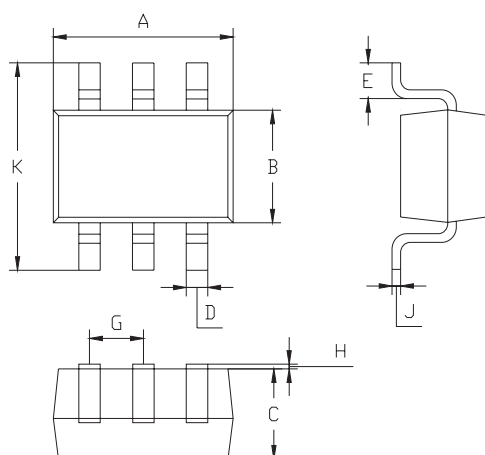


Fig. 5, Typical Base-Emitter  
Saturation Voltage vs. Collector Current

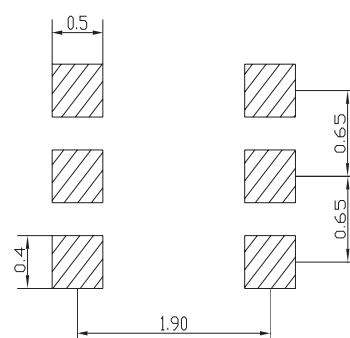
## Package Outline

Plastic surface mounted package



SOT-363		
Dim.	Min.	Max.
A	1.8	2.2
B	1.15	1.35
C	1 Typical	
D	0.1	0.3
E	0.25	0.4
G	0.65 Typical	
H	0.02	0.1
J	0.1 Typical	
K	2.1	2.3
All Dimensions in mm		

## Soldering Footprint



Dimensions : Millimetres

## Part Number Table

Description	Part Number
Transistor, Dual PNP, -40V, -200mA, SOT-363	MMDT3906-7-F

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