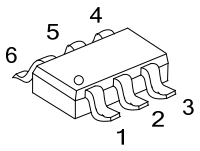
MMDT3906

Preliminary **PNP EPITAXIAL SILICON TRANSISTOR**

DUAL PNP SMALL SIGNAL SURFACE MOUNT TRANSISTOR



SOT-363

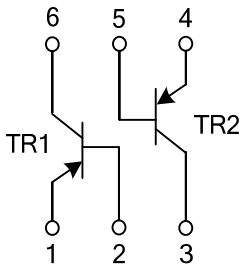
■ DESCRIPTION

The UTC **MMDT3906** is a Dual PNP small signal surface mount transistor. It's suitable for low power amplification and switch.

■ FEATURES

* Suitable for Low Power Amplification and Switching
* Epitaxial Planar Die Construction
* Extremely-Small Surface Mount Package

■ EQUIVALENT CIRCUIT



■ ORDERING INFORMATION

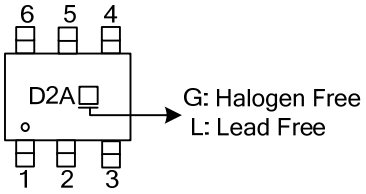
Ordering Number		Package							Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
MMDT3906L-AL6-R	MMDT3906G-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

MMDT3906L-AL6-R

(1)Packing Type
(2)Package Type
(3)Lead Free

(1) R: Tape Reel
(2) AL6: SOT-363
(3) Halogen Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	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	P_D	200	mW
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55~+150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	625	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF Characteristics (Note)						
Collector-Base Breakdown Voltage	V_{CBO}	I_C=-10μA,I_E=0	-40			V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C=-1mA, I_B=0	-40			V
Emitter-Base Breakdown Voltage	V_{EBO}	I_E=-10μA, I_C=0	-5			V
Collector Cutoff Current	I_{CEX}	V_{CE}=-30V, V_{EB}=-3V			-50	nA
Base Cutoff Current	I_{BL}	V_{CE}=-30V, V_{EB}=-3V			-50	nA
ON Characteristics (Note)						
DC Current Gain	h_{FE1}	V_{CE}=-1V, I_C=-0.1mA	60			
	h_{FE2}	V_{CE}=-1V, I_C=-1mA	80			
	h_{FE3}	V_{CE}=-1V, I_C=-10mA	100		300	
	h_{FE4}	V_{CE}=-1V, I_C=-50mA	60			
	h_{FE5}	V_{CE}=-1V, I_C=-100mA	30			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}1$	I_C=-10mA, I_B=-1mA			-0.25	V
	$V_{CE(SAT)}2$	I_C=-50mA, I_B=-5mA			-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}1$	I_C=-10mA, I_B=-1mA	-0.65		-0.85	V
	$V_{BE(SAT)}2$	I_C=-50mA, I_B=-5mA			-0.95	V
Small Signal Characteristics						
Output Capacitance	C_{OB}	V_{CB}=-5V,I_E=0, f=1MHz			4.5	pF
Current Gain-Bandwidth Product	f_T	V_{CE}=-20V, I_C=-10mA, f=100MHz	250			MHz
Switching Characteristics						
Turn on Time	t_{ON}	V_{CC}=-3V, V_{BE}=-0.5V, I_C=-10mA, I_{B1}=-1mA			70	ns
Turn off Time	t_{OFF}	I_{B1}=1_{B2}=-1mA			300	ns

Note: Pulse test: PW ≤ 300μs, Duty Cycle≤2.0%