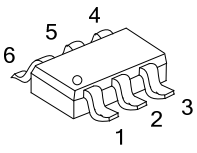
MMDT8050S

NPN EPITAXIAL SILICON TRANSISTOR

LOW VCESAT NPN EPITAXIAL PLANAR TRANSISTOR



SOT-363

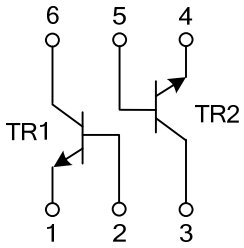
■ DESCRIPTION

The UTC **MMDT8050S** is a Dual NPN epitaxial planar transistor. It has low $V_{CE(sat)}$ performance, and the transistor elements are independent, eliminating interference.

■ FEATURES

* Low $V_{CE(sat)}$, $V_{CE(sat)}$ = 40mV (typ.) @ I_C / I_B = 50mA / 2.5mA
* Transistor elements are independent, eliminating interference.
* Mounting cost and area can be cut in half.

■ EQUIVALENT CIRCUIT

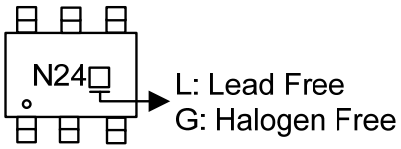


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
MMDT8050SL-AL6-R	MMDT8050SG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

MMDT8050SG-AL6-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (DC)	I_C	700	mA
Collector Current (Pulse)	I_{CP}	1.5 (Note 2)	A
Total Power Dissipation	P_D	200	mW
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Notes: 1. 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.
2. Single pulse, P_W=10ms.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C = 100μA, I_E = 0	30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C = 1mA, I_B = 0	20			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E = 100μA, I_C =0	5			V
Collector Cut-Off Current	I_{CBO}	V_{CB} = 30V,I_E = 0			1	uA
Emitter Cut-Off Current	I_{EBO}	V_{EB} = 5V, I_C = 0			100	nA
DC Current Gain(note)	h_{FE1}	V_{CE} = 1V, I_C = 1mA	100			
	h_{FE2}	V_{CE} = 1V, I_C = 150 mA	120		400	
	h_{FE3}	V_{CE} = 1V, I_C = 500mA	40			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C = 500mA, I_B = 50mA			0.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C = 500mA, I_B = 50mA			1.2	V
Base Emitter On Voltage	$V_{BE(ON)}$	V_{CE} = 1V, I_C = 10mA			1.0	V
Current Gain Bandwidth Product	f_T	V_{CE} = 10V, I_C = 50mA	100			MHz
Output Capacitance	Cob	V_{CB} = 10V, I_E = 0, f = 1MHz		9.0		pF

Note: Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

■ TYPICAL CHARACTERISTICS