



MMDT8150

Preliminary

NPN EPITAXIAL SILICON TRANSISTOR

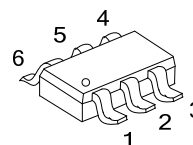
LOW $V_{CE(SAT)}$ NPN EPITAXIAL PLANAR TRANSISTOR

DESCRIPTION

The UTC **MMDT8150** is a Dual NPN epitaxial planar transistor. It has low $V_{CE(SAT)}$ performance and the transistor elements are independent to eliminate interference.

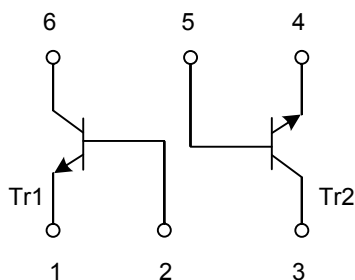
FEATURES

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



SOT-363

EQUIVALENT CIRCUIT

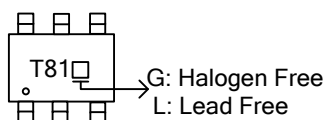


ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
MMDT8150L-AL6-R	MMDT8150G-AL6-R	SOT-363	Tape Reel

<p>MMDT8150L-AL6-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p>	<p>(1) R: Tape Reel (2) AL6: SOT-363 (3) Halogen Free, L: Lead Free</p>
--	---

MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (DC)	I_C	800	mA
Collector Current (Pulse)	I_{CP}	1.5 (Note 2)	A
Power Dissipation	P_D	200 (total) (Note 3)	mW
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$

Note: 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, $P_W=10\text{ms}$

3. 150mW per element must not be exceeded.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	40			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=2\text{mA}$, $I_B=0$	25			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}$, $I_C=0$	6			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30\text{V}$, $I_E=0$			0.5	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=6\text{V}$, $I_C=0$			0.5	μA
Collector-Emitter Saturation Voltage (Note 1)	$V_{CE(SAT)1}$	$I_C=50\text{mA}$, $I_B=2.5\text{mA}$		40	60	mV
	$V_{CE(SAT)2}$	$I_C=400\text{mA}$, $I_B=20\text{mA}$		0.2	0.3	V
	$V_{CE(SAT)3}$	$I_C=800\text{mA}$, $I_B=80\text{mA}$		0.3	0.5	V
Base-Emitter Voltage	$V_{BE(ON)}$	$V_{CE}=1\text{V}$, $I_C=10\text{mA}$			1	V
DC Current Gain	h_{FE1}	$V_{CE}=1\text{V}$, $I_C=100\text{mA}$	180		560	
	h_{FE2}	$V_{CE}=1\text{V}$, $I_C=500\text{mA}$	40			
	h_{FE3}	$V_{CE}=2\text{V}$, $I_C=50\text{mA}$	82			
Current Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}$, $I_C=50\text{mA}$, $f=100\text{MHz}$		150		MHz
Output Capacitance	C_{OBO}	$V_{CB}=10\text{V}$, $f=1\text{MHz}$		15		pF

Note: 1. Pulse Test : Pulse Width $\leq 380\mu\text{s}$, Duty Cycles $\leq 2\%$

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.