



UMZ1N

Preliminary

DUAL TRANSISTOR

GENERAL PURPOSE TRANSISTOR

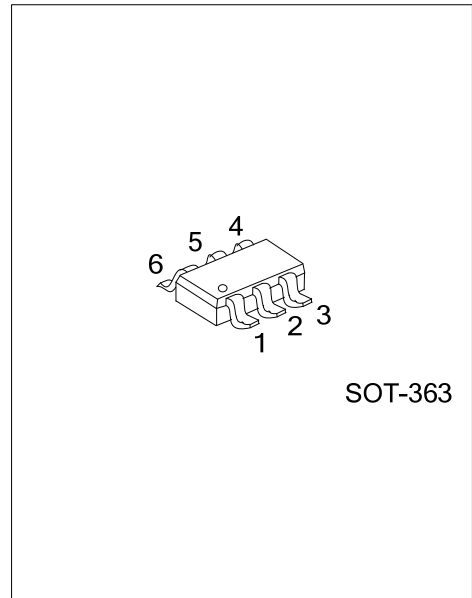
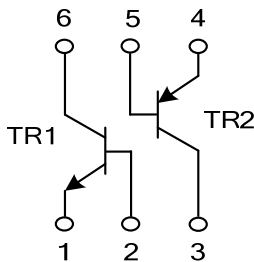
DESCRIPTION

The UTC **UMZ1N** is a dual transistor, including an NPN transistor and a PNP transistor. It uses UTC's advanced technology to provide customers with high DC current gain, etc.

FEATURES

* High DC current gain (NPN: $h_{FE} > 120$ @ $V_{CE} = 6V, I_C = 1mA$;
PNP: $h_{FE} > 120$ @ $V_{CE} = -6V, I_C = -1mA$)

SYMBOL

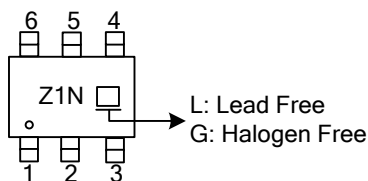


ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UMZ1NL-AL6-R	UMZ1NG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

<p>UMZ1NL-AL6-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AL6: SOT-363</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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MARKING



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

PARAMETER	SYMBOL	LIMITS		UNIT
		TR1	TR2	
Collector-Base Voltage	V_{CBO}	60	-60	V
Collector-Emitter Voltage	V_{CEO}	50	-50	V
Emitter-Base Voltage	V_{EBO}	7	-6	V
Collector Current	I_C	0.15	-0.15	A
Collector Power Dissipation	P_C	0.15		W
Junction Temperature	T_J	150		$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150		$^{\circ}\text{C}$

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.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
TR1						
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=50\mu\text{A}$	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}$	50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=50\mu\text{A}$	7			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=60\text{V}$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=7\text{V}$			0.1	μA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C/I_B=50\text{mA}/5\text{mA}$			0.4	V
DC Current Transfer Ratio	h_{FE}	$V_{CE}=6\text{V}, I_C=1\text{mA}$	120		560	
Transition Frequency	f_T	$V_{CE}=12\text{V}, I_E=-2\text{mA}, f=100\text{MHz}$		180		MHz
Output Capacitance	C_{ob}	$V_{CB}=12\text{V}, I_E=0\text{A}, f=1\text{MHz}$		2	3.5	pF
TR2						
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=-50\mu\text{A}$	-60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=-1\text{mA}$	-50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=-50\mu\text{A}$	-6			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-60\text{V}$			-0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-6\text{V}$			-0.1	μA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C/I_B=-50\text{mA}/-5\text{mA}$			-0.5	V
DC Current Transfer Ratio	h_{FE}	$V_{CE}=-6\text{V}, I_C=-1\text{mA}$	120		560	
Transition Frequency	f_T	$V_{CE}=-12\text{V}, I_E=2\text{mA}, f=100\text{MHz}$		140		MHz
Output Capacitance	C_{ob}	$V_{CB}=-12\text{V}, I_E=0\text{A}, f=1\text{MHz}$		4.0	5.0	pF

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