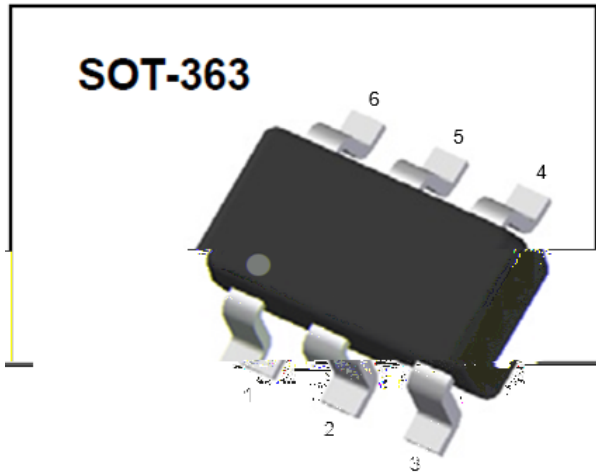


Digital Transistors (Built-in Resistors)



- 1、 GND (Emitter) ..
- 2、 Input (base) ..
- 3、 Output (collector) ..
- 4、 GND (Emitter) ..
- 5、 Input (base) ..
- 6、 Output (collector) ..

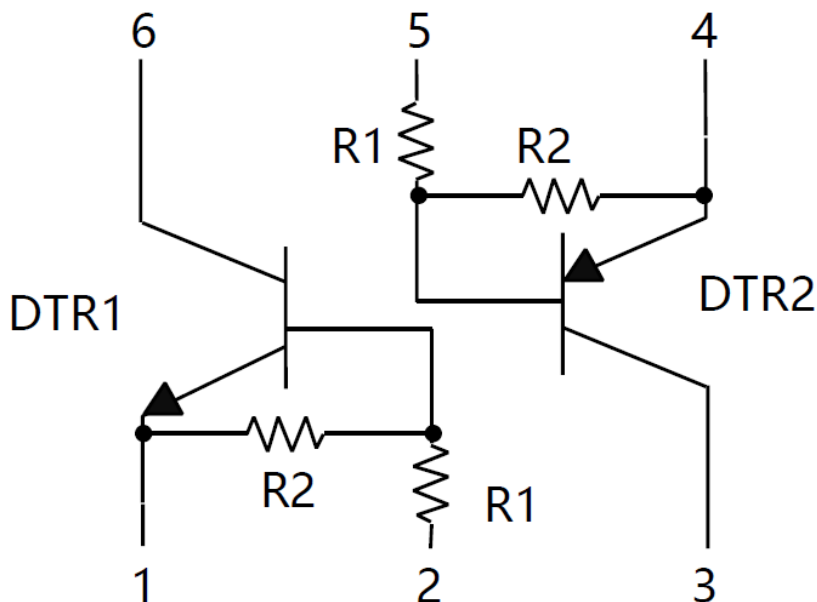
Features

- Epoxy meets UL-94 V-0 flammability rating
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- Surface mount package ideally Suited for Automatic Insertion

Mechanical Data

- **Package:** SOT-363
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** D15

Equivalent circuit





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■Maximum Ratings (Ta=25 Unless otherwise specified) DTR1-NPN

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Supply Voltage	V_{CC}	V		50
Input Voltage	V_{IN}	V		-10 to +30
Output Current	I_O	mA		100
Power Dissipation	P_D	mW		150
Junction Temperature Single	T_j			150
Storage Temperature	T_{STG}			-55 to +150

DTR2-PNP

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Supply Voltage	V_{CC}	V		-50
Input Voltage	V_{IN}	V		-30 to +10
Output Current	I_O	mA		-100
Power Dissipation	P_D	mW		150
Junction Temperature	T_j			150
Storage Temperature	T_{STG}			-55 to +150

■Electrical Characteristics (Ta=25 unless otherwise specified) DTR1-NPN

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Input voltage	$V_{I(off)}$	V	$V_{CC}=5V, I_C=100\mu A$	0.5	-	-
	$V_{I(on)}$	V	$V_O=0.3V, I_C=20mA$	-	-	3
Output voltage	$V_{O(on)}$	V	$I_O/I_I=10mA/0.5mA$	-	-	0.3
Input current	I_I	mA	$V_I=5V$	-	-	1.8
Output current	$I_{O(off)}$	μA	$V_{CC}=50V, V_I=0$	-	-	0.5
DC current gain	G_I		$V_O=5V, I_O=10mA$	20	-	-
Input resistance	R_1	k Ω		3.29	4.7	6.11
Resistance ratio	R_2/R_1			0.8	1	1.2
Transition frequency	f_T	MHz	$V_{CE}=10V, I_E=5mA, f=100MHz$	-	250	-



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DTR2-PNP

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Input voltage	$V_{I(off)}$	V	$V_{CC}=-5V, I_c=-100\mu A$	-0.5	-	-
	$V_{I(on)}$	V	$V_O=-0.3V, I_c=-20mA$	-	-	-3
Output voltage	$V_{O(on)}$	V	$I_o / I_i = -10mA / -0.5 mA$	-	-	-0.3
Input current	I_i	mA	$V_i=-5V$	-	-	-1.8
Output current	$I_{O(off)}$	μA	$V_{CC}=-50V, V_i=0$	-	-	-0.5
DC current gain	G_i		$V_o=-5V, I_o = -10mA$	30	-	-
Input resistance	R_i	k Ω		3.29	4.7	6.11
Resistance ratio	R_2/R_1			0.8	1	1.2
Transition frequency	f_T	MHz	$V_{CE}=-10V, I_E=-5mA, f=100MHz$	-	250	-

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
UMD15N	F2	1,5g	2000	100	10	Standard



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Fig. 3 - DTR1 Input Voltage (off) Characteristics

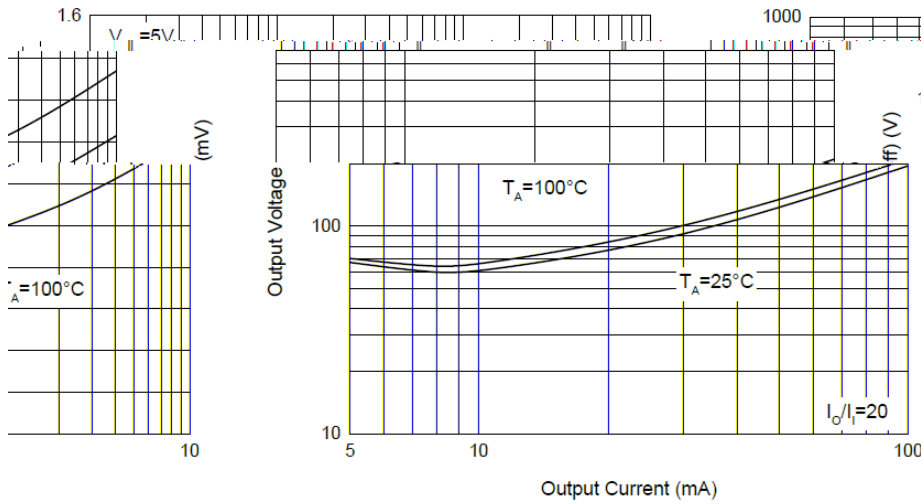


Fig. 4 - DTR1 Output Voltage Characteristics

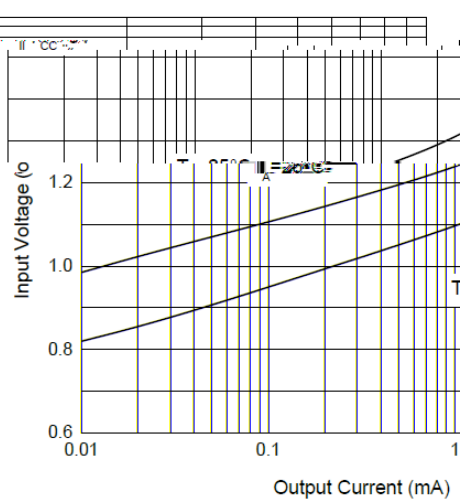


Fig. 5 - DTR2 DC Current Gain Characteristics

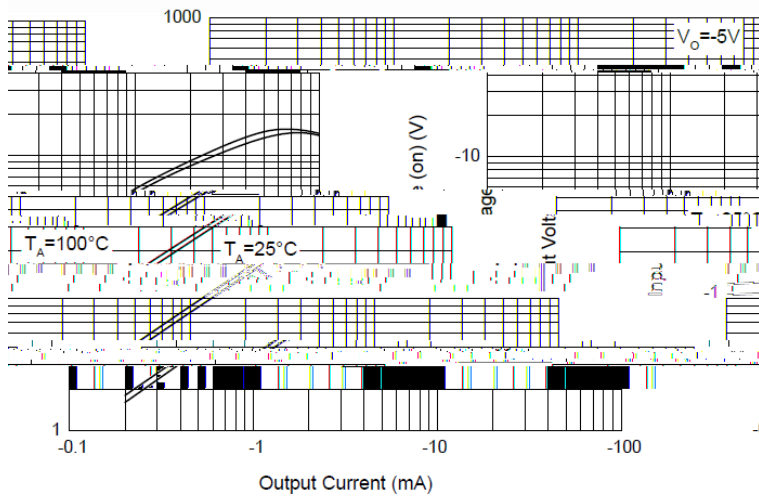


Fig. 6 - DTR2 Input Voltage (on) Characteristics

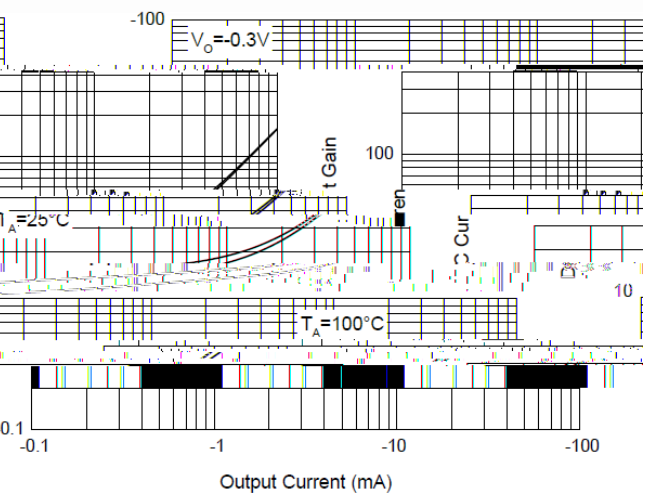


Fig. 7 - DTR2 Input Voltage (off) Characteristics

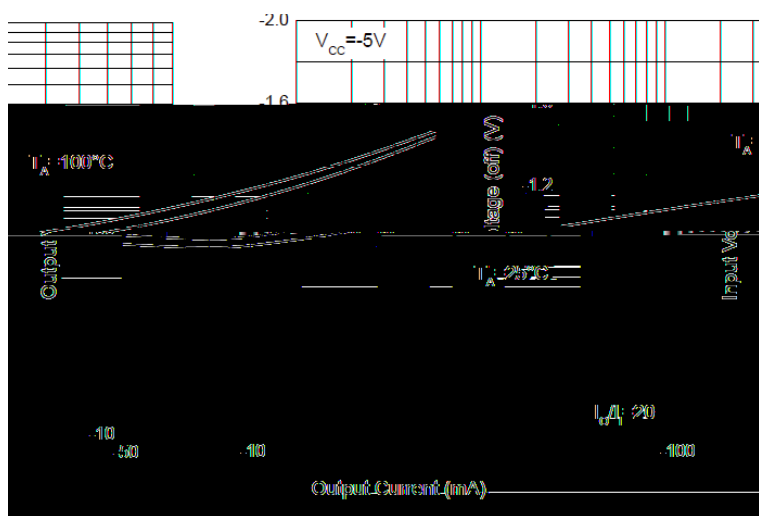
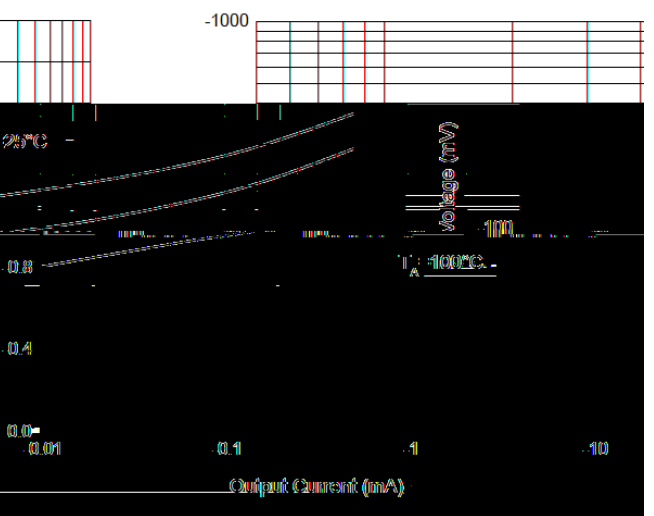


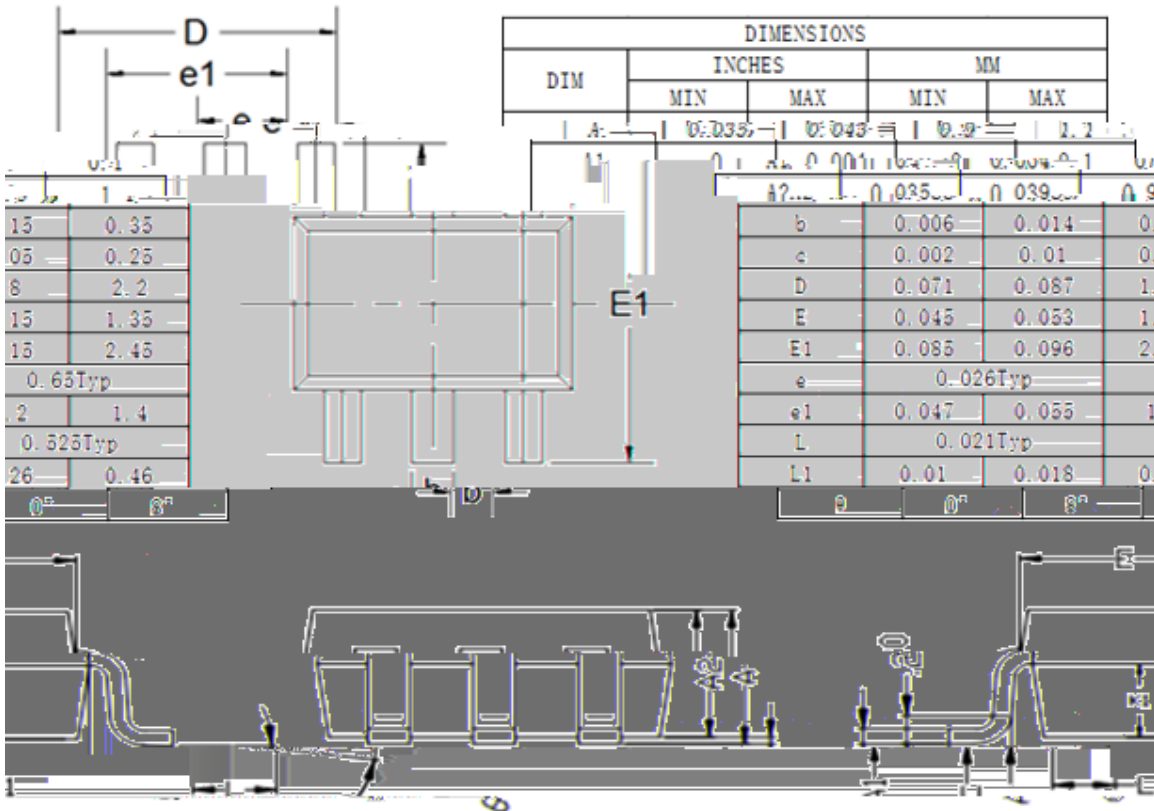
Fig. 8 - DTR2 Output Voltage Characteristics



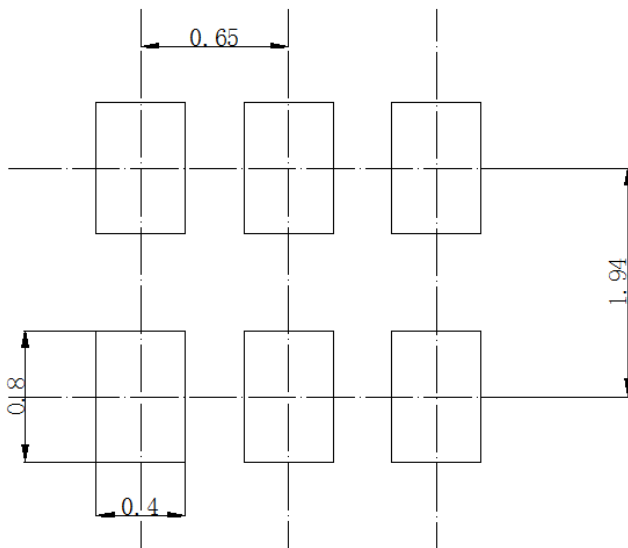


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■SOT-363 Package Outline Dimensions



■SOT-363 Suggested Pad Layout



Unit mm



UMD15N

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