

Digital Transistors (Built-in Resistors)



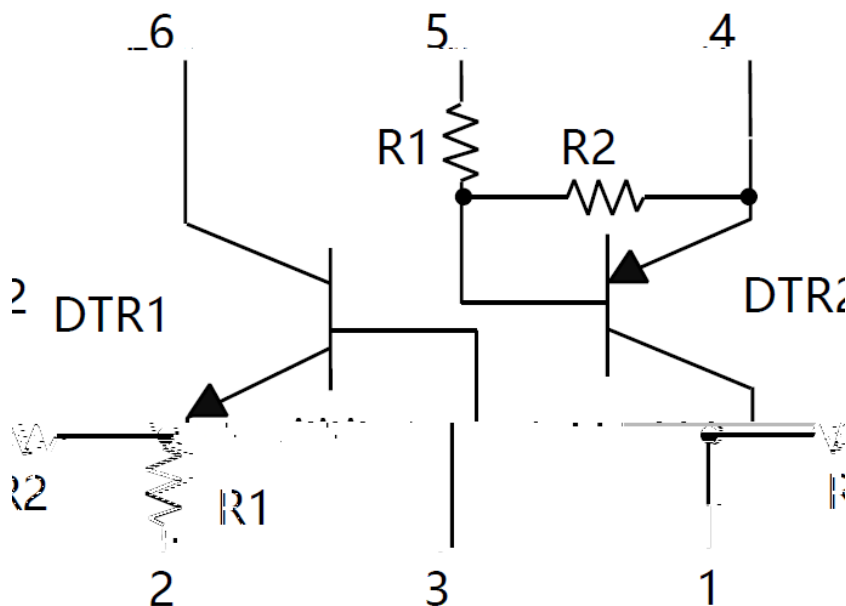
Features

- 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:** D9

■Equivalent circuit





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



UMD9N

DTR2-PNP

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Input voltage	$V_{I(off)}$	V	$V_{CC}=-5V, I_c=-100\mu A$	-0.3	-	-
	$V_{I(on)}$	V	$V_o=-0.3V, I_c=-1mA$	-	-	-1.4
Output voltage	$V_{O(on)}$	V	$I_o/I_i=-5mA/-0.25mA$	-	-	-0.3
Input current	I_i	mA	$V_i=-5V$	-	-	-0.88
Output current	$I_{O(off)}$	μA	$V_{CC}=-50V, V_i=0$	-	-	-0.5
DC current gain	G_i		$V_o=-5V, I_o=-5mA$	68	-	-
Input resistance	R_i	$k\Omega$		7	10	13
Resistance ratio	R_2/R_1			3.7	4.7	5.7
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
UMD9N	F2	Approximate 0.009g	3000	30000	120000	7" reel

■ Characteristics (Typical)

Fig. 1 - DTR1 DC Current Gain Characteristics

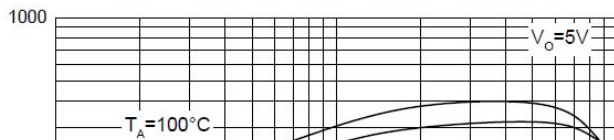


Fig. 2 - DTR1 Input Voltage (on) Characteristics

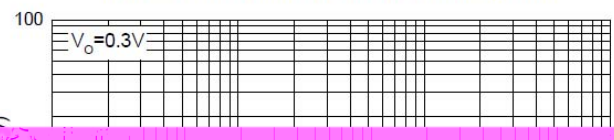


Fig. 3 - DTR1 Input Voltage (off) Characteristics

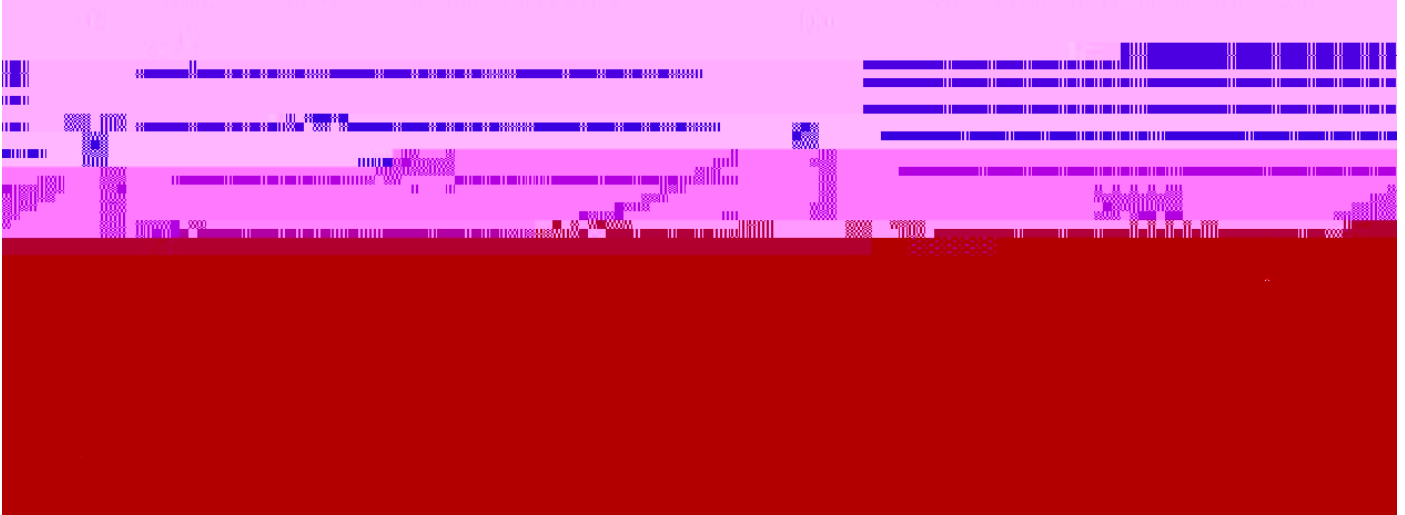


Fig. 5 - DTR2 DC Current Gain Characteristics

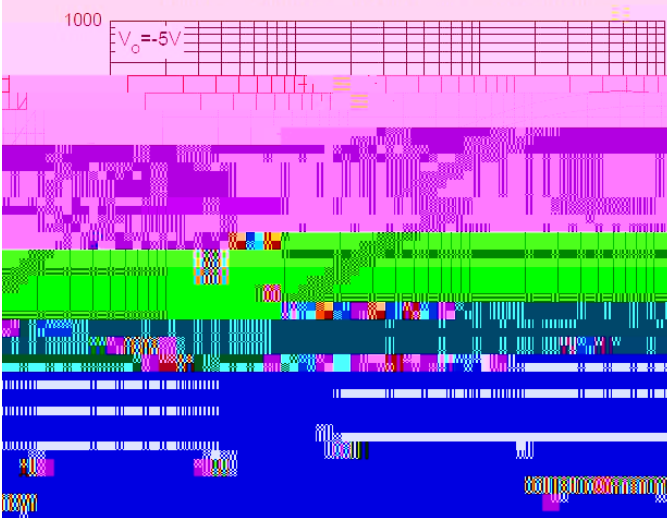


Fig. 6 - DTR2 Input Voltage (on) Characteristics

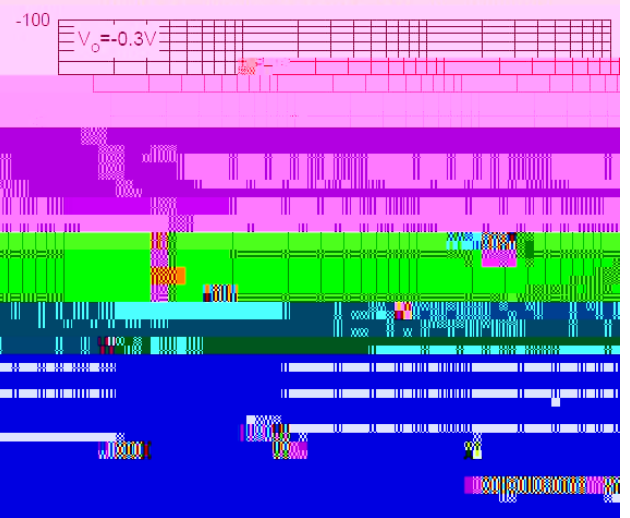
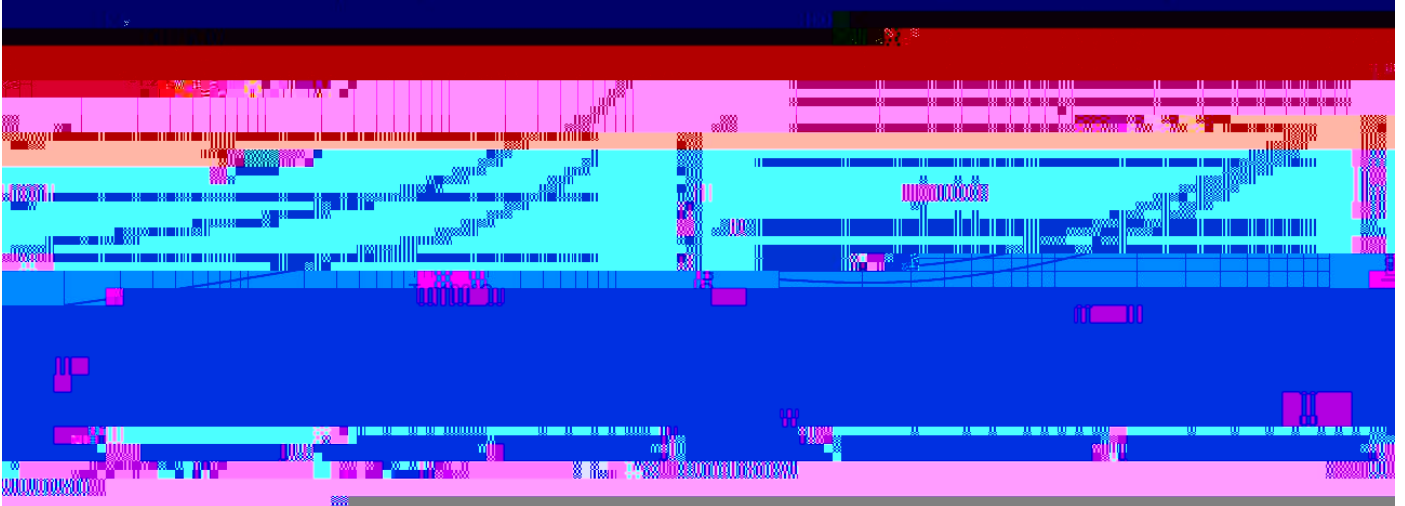
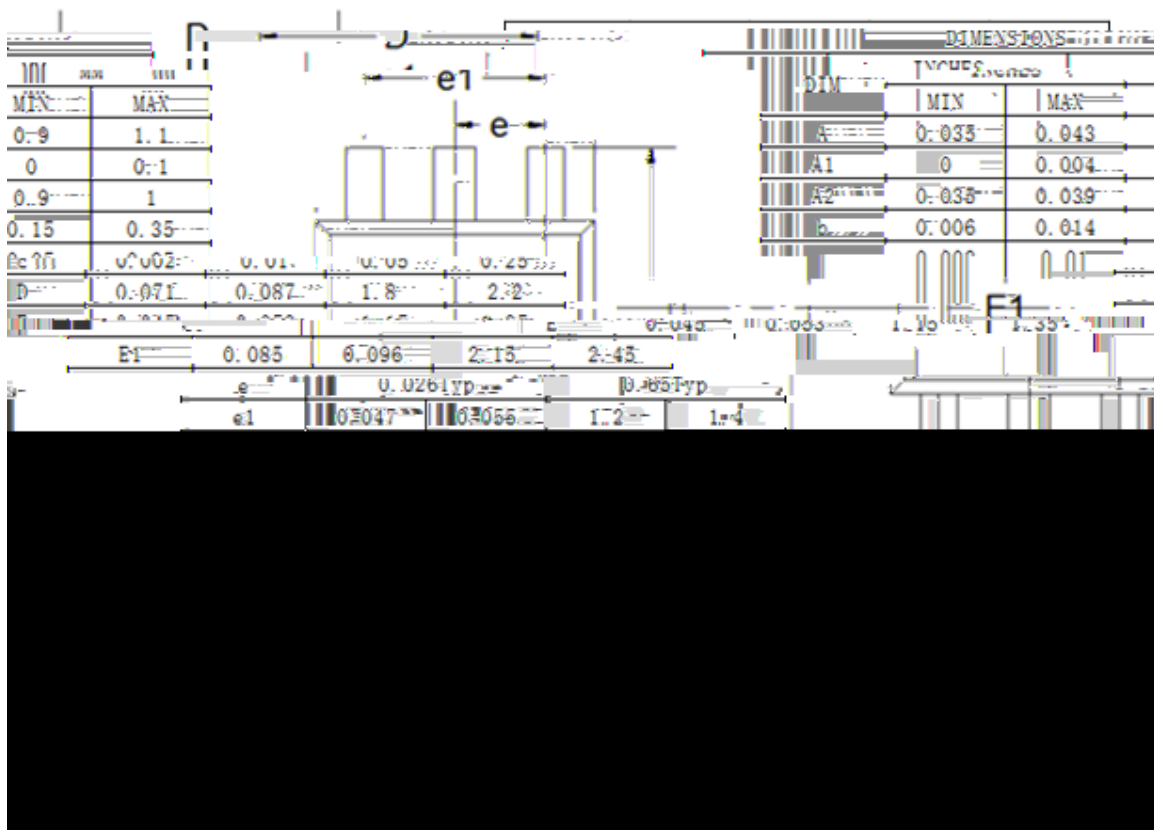


Fig. 7 - DTR2 Input Voltage (off) Characteristics

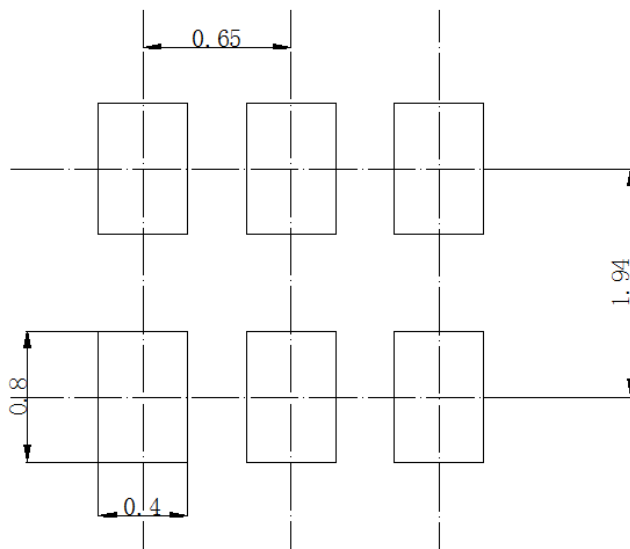




■SOT-363 Package Outline Dimensions



■SOT-363 Suggested Pad Layout



Unit mm

