

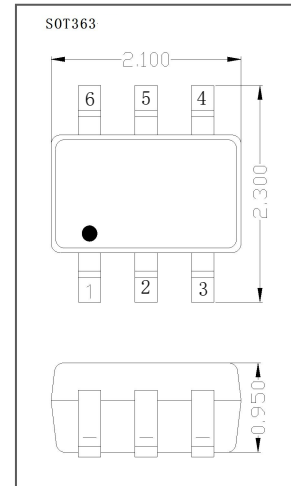
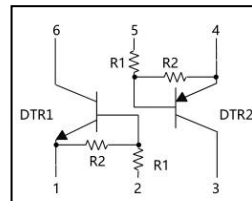
DATA SHEET

UMD9N

- ◇ Epoxy meets UL 94 V-0 flammability rating
- ◇ Lead Free Finish/RoHS Compliant
- ◇ Mounting Possible With SOT-363 Automatic Mounting Machines
- ◇ Transistor Elements Independent, Eliminating Interference

Device Marking Code	
UMD9N	D9

Equivalent Circuit



Maximum Ratings (Ta = 25 °C)

DTR1 NPN

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	50	V
V _{IN}	Input Voltage	-6~40	V
I _O	Output Current	70	mA
I _{C(Max)}		100	mA
P _D	Power Dissipation	150	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~150	°C

DTR2 PNP

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	-50	V
V _{IN}	Input Voltage	-40~6	V
I _O	Output Current	-70	mA
I _{C(Max)}		-100	mA
P _D	Power Dissipation	150	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~150	°C

Electrical Characteristics @ 25 °C Unless Otherwise Specified

DTR1 NPN

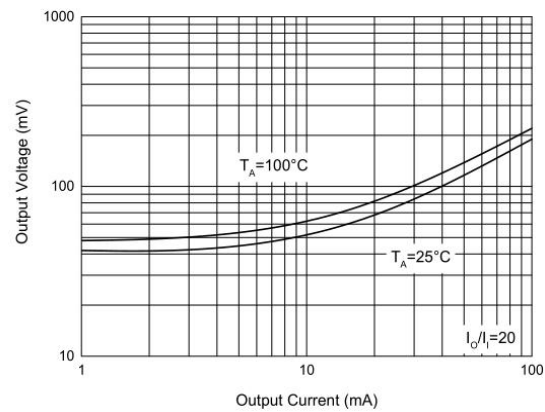
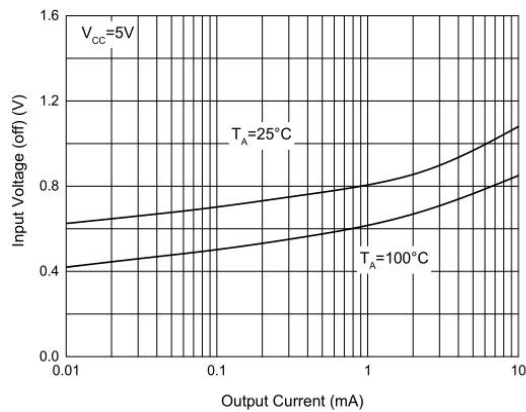
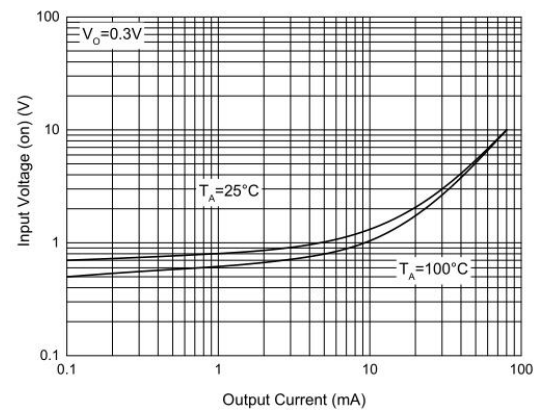
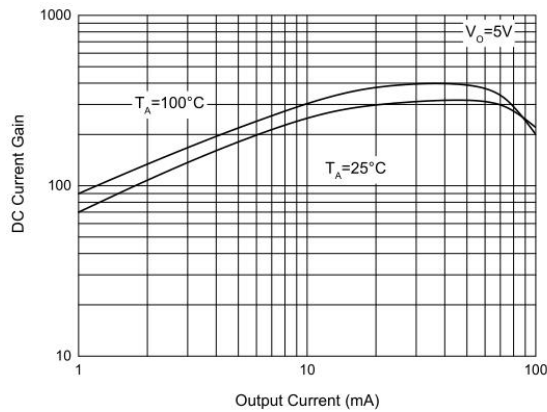
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
V _{I(off)}	Input Voltage	V _{CC} =5V, I _O =100 μA	0.3			V
V _{I(on)}		V _O =0.3V, I _O =1mA			1.4	V
V _{O(on)}	Output Voltage	I _O =5mA, I _I =0.25mA			0.3	V

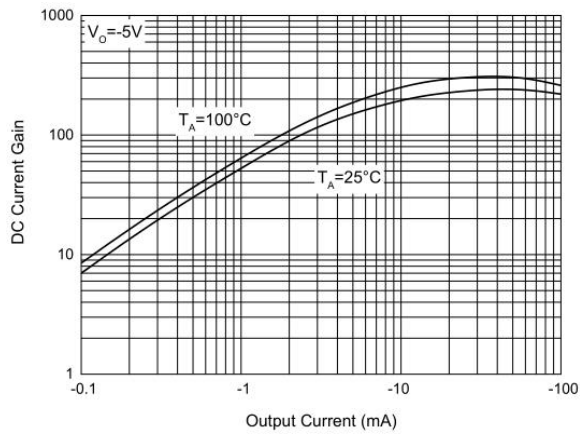
I_I	Input Current	$V_I=5V$			0.88	mA
$I_{O(off)}$	Output Current	$V_{CC}=50V, V_I=0$			0.5	μA
G_I	DC Current Gain	$V_O=5V, I_O=5mA$	68			
R_I	Input Resistance		7	10	13	$K\Omega$
R_2/R_1	Resistance Ratio		3.7	4.7	5.7	
f_T	Transition Frequency	$V_{CE}=10V, I_E=-5mA, f=100MHz$		250		MHz

DTR2 PNP

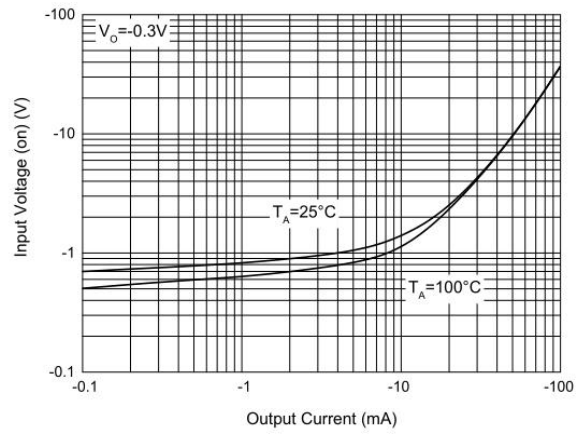
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{I(off)}$	Input Voltage	$V_{CC}=-5V, I_O=-100\mu A$	-0.3			V
$V_{I(on)}$		$V_O=-0.3V, I_O=-1mA$			-1.4	V
$V_{O(on)}$	Output Voltage	$I_O=-5mA, I_I=-0.25mA$			-0.3	V
I_I	Input Current	$V_I=-5V$			-0.88	mA
$I_{O(off)}$	Output Current	$V_{CC}=-50V, V_I=0$			-0.5	μA
G_I	DC Current Gain	$V_O=-5V, I_O=-5mA$	68			
R_I	Input Resistance		7	10	13	$K\Omega$
R_2/R_1	Resistance Ratio		3.7	4.7	5.7	
f_T	Transition Frequency	$V_{CE}=-10V, I_E=5mA, f=100MHz$		250		MHz

Typical Characteristics

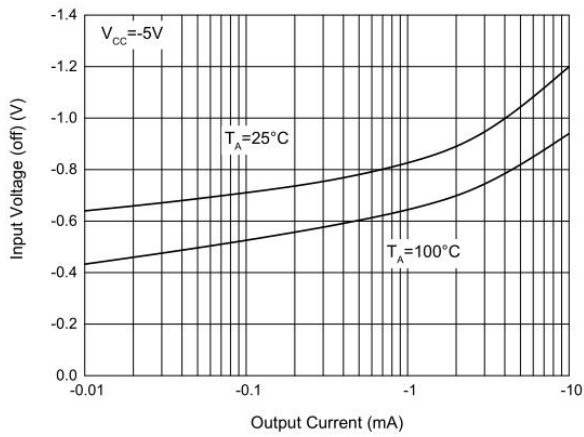




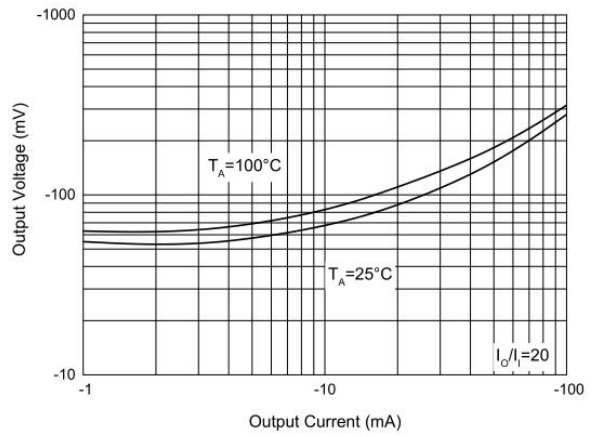
DTR2 DC Current Gain Characteristics



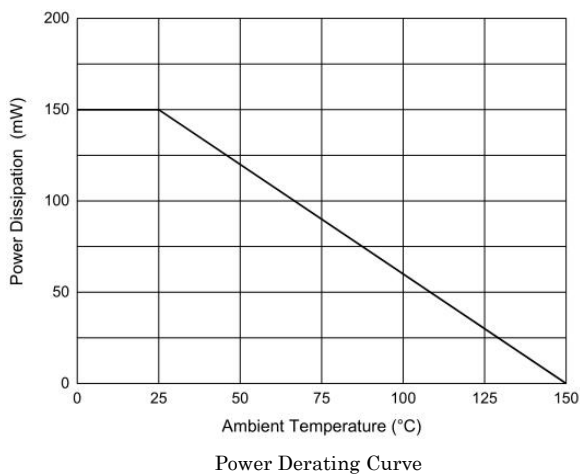
DTR2 Input Voltage (on) Characteristics



DTR2 Input Voltage (off) Characteristics



DTR2 Output Voltage Characteristics



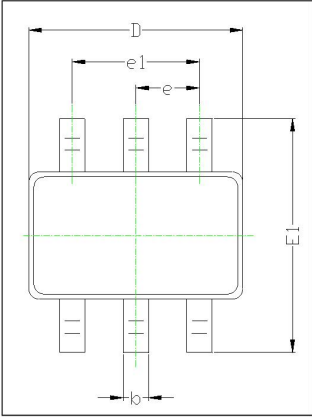
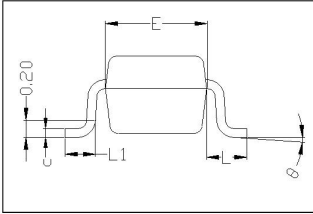
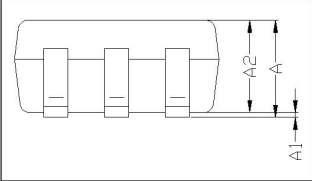
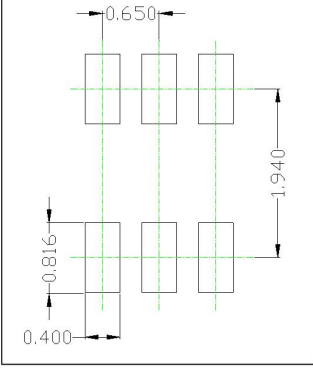
Power Derating Curve

ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
UMD9N	SOT363	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

Package outline : SOT363

SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.900	1.000
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.100	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°

Notice:

- Lead plating: Pb free solder
- Lead thickness includes solder plating
- Lead frame: CAC-5
- Other Tolerance: ± 0.05
- Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
- Unit: mm

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