UMD15N-TP Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	UMD15N-TP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	UMD15N-TP
Description	Interface
Detailed Description	Pre-Biased Bipolar Transistor (BJT) NPN - Pre-Biased 50V 100mA 250MHz 150mW Surface Mount SOT-363

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
UMD15N-TP	Micro Commercial Co
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
NPN - Pre-Biased	100mA
Voltage - Collector Emitter Breakdown (Max):	Resistor - Base (R1):
50V	4.7kOhms
Resistor - Emitter Base (R2):	DC Current Gain (hFE) (Min) @ Ic, Vce:
4.7kOhms	20 @ 10mA, 5V
Vce Saturation (Max) @ Ib, Ic:	Current - Collector Cutoff (Max):
300mV @ 500µA, 10mA	500nA
Frequency - Transition:	Power - Max:
250MHz	150mW
Mounting Type:	Package / Case:
Surface Mount	6-TSSOP, SC-88, SOT-363
Supplier Device Package:	Base Product Number:
SOT-363	UMD15

Environmental & Export classification

REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

Micro Commercial Components

UMD15N

Features

- Both the DTA143E Chip and DTC143E Chip In a Package
- Mounting Possible With SOT-363 Automatic Mounting Machines
- Transistor Elements Independent, Eliminating Interference
- Halogen Free. “Green” Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant.See Ordering Information)

NPN&PNP Digital Transistor

Maximum Ratings @ 25°C Unless Otherwise Specified

DTR1

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10~30	V
Output Current	I_O	100	mA
	$I_{C(Max)}$	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55~150	°C

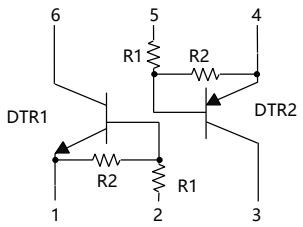
DTR2

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-30~10	V
Output Current	I_O	-100	mA
	$I_{C(Max)}$	-100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55~150	°C

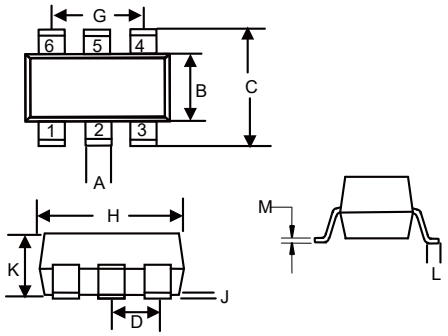
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Device Marking：D15

Internal Structure

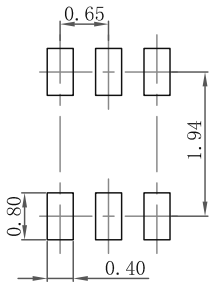


SOT-363



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.014	0.15	0.35	
B	0.045	0.053	1.15	1.35	
C	0.079	0.096	2.00	2.45	
D	0.026		0.65		TYP.
G	0.047	0.055	1.20	1.40	
H	0.071	0.087	1.80	2.20	
J	-----	0.004	-----	0.10	
K	0.031	0.043	0.80	1.10	
L	0.010	0.018	0.26	0.46	
M	0.003	0.006	0.08	0.15	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

DTR1 NPN

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.5	---	---	V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$	---	---	3.0	V	V_O=0.3V, I_O=20mA
Output Voltage	$V_{O(on)}$	---	---	0.3	V	I_O=10mA,I_I=0.5mA
Input Current	I_I	---	---	1.8	mA	V_I=5V
Output Current	$I_{O(off)}$	---	---	0.5	μA	V_{CC}=50V, V_I=0
DC Current Gain	G_I	20	---	---		V_O=5V, I_O=10mA
Input Resistance	R_1	3.29	4.7	6.11	KΩ	
Resistance Ratio	R_2/R_1	0.8	1	1.2		
Transition Frequency	f_T	---	250	---	MHz	V_{CE}=10V, I_E=-5mA, f=100MHz

DTR2 PNP

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	-0.5	---	---	V	V_{CC}=-5V, I_O=-100μA
	$V_{I(on)}$	---	---	-3.0	V	V_O=-0.3V, I_O=-20mA
Output Voltage	$V_{O(on)}$	---	---	-0.3	V	I_O=-10mA,I_I=-0.5mA
Input Current	I_I	---	---	-1.8	mA	V_I=-5V
Output Current	$I_{O(off)}$	---	---	-0.5	μA	V_{CC}=-50V, V_I=0
DC Current Gain	G_I	30	---	---		V_O=-5V, I_O=-10mA
Input Resistance	R_1	3.29	4.7	6.11	KΩ	
Resistance Ratio	R_2/R_1	0.8	1.0	1.2		
Transition Frequency	f_T	---	250	---	MHz	V_{CE}=-10V, I_E=5mA, f=100MHz

Curve Characteristics

Fig. 1 - DTR1 DC Current Gain Characteristics

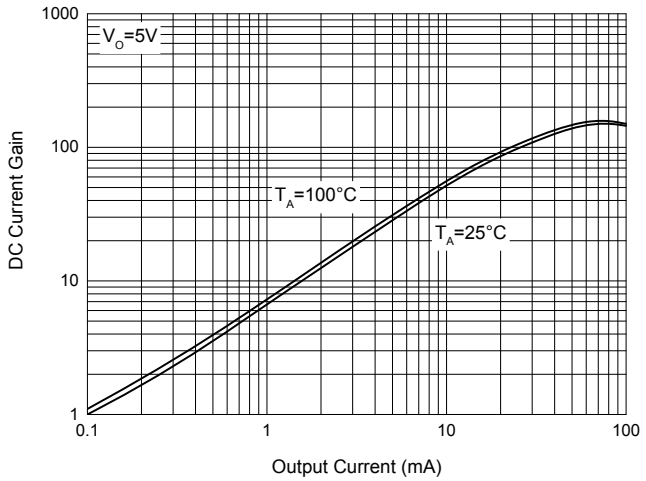


Fig. 2 - DTR1 Input Voltage (on) Characteristics

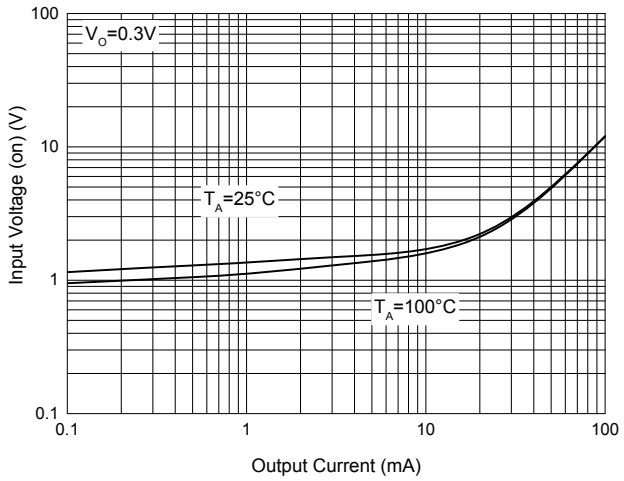


Fig. 3 - DTR1 Input Voltage (off) Characteristics

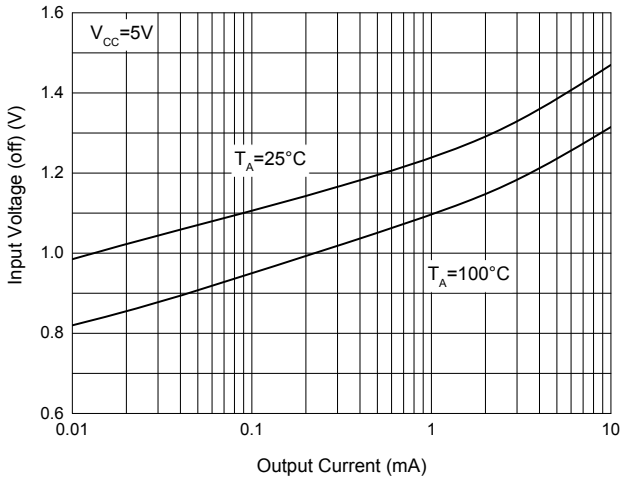


Fig. 4 - DTR1 Output Voltage Characteristics

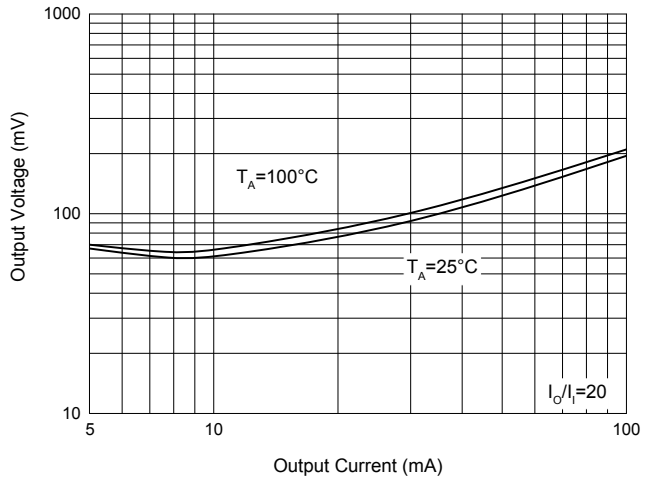


Fig. 5 - DTR2 DC Current Gain Characteristics

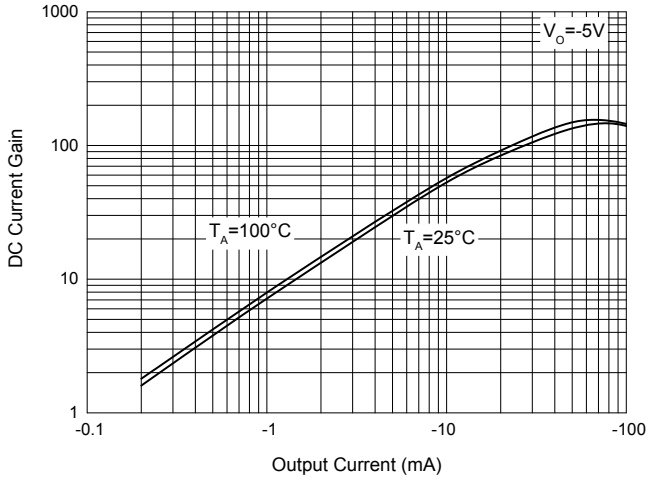
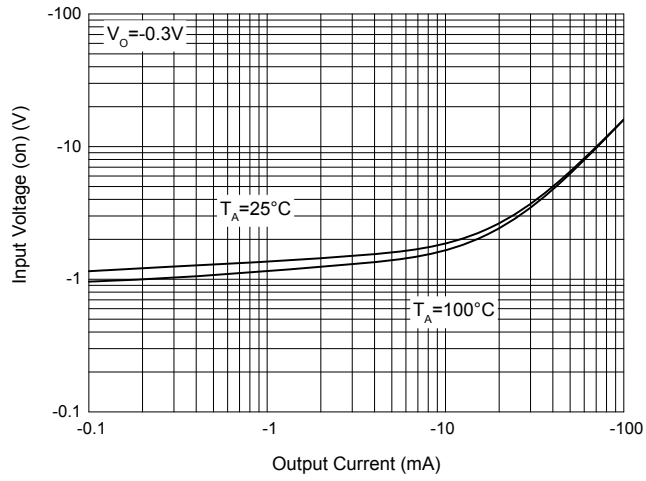


Fig. 6 - DTR2 Input Voltage (on) Characteristics



Curve Characteristics

Fig. 3 - DTR2 Input Voltage (off) Characteristics

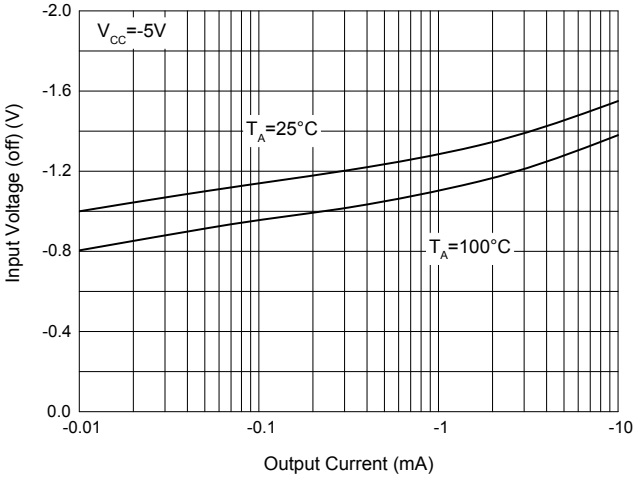


Fig. 8 - DTR2 Output Voltage Characteristics

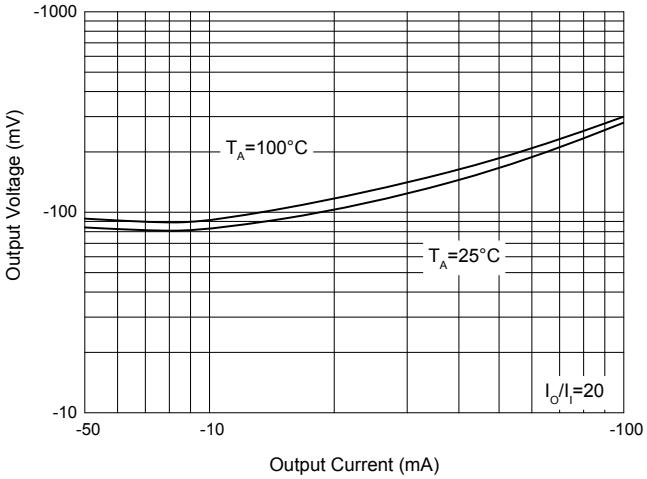
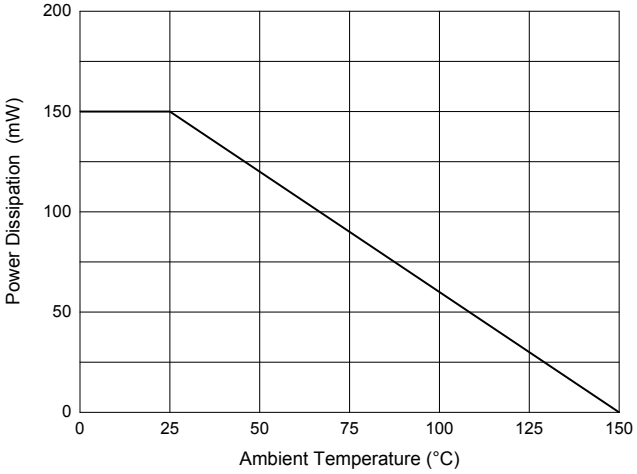


Fig. 9 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

OUR CERTIFICATE

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