



Digital Transistor

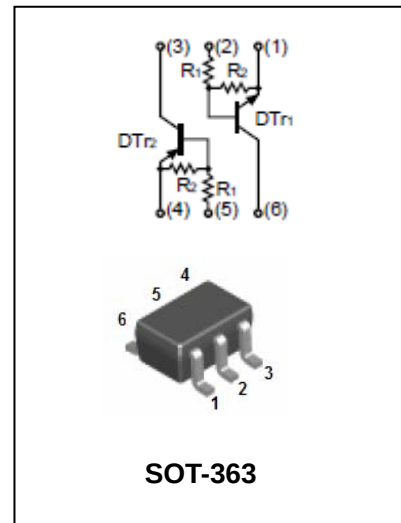
UMD12N

FEATURES

- Both the DTA144E and DTC144E in SOT-363 package.



Lead-free



APPLICATIONS

- NPN/PNP epitaxial planar silicon transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
UMD12N	D12	SOT-363

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value		Unit
		T _{r1}	T _{r2}	
V _{CC}	Supply Voltage	50	-50	V
V _{IN}	Input Voltage	40	-10	V
I _O	Output Current	30	-30	mA
I _C	Collector Current	100	-100	mA
P _c	Power Dissipation (NOTE 1)	150		mW
T _j , T _{stg}	Junction and Storage Temperature	-55 to +150		°C

NOTE 1: 120mW per element must not be exceeded. PNP type negative symbols have been omitted.



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ELECTRICAL CHARACTERISTICS T_{R1} Section @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	V _{I(off)}	V _{CC} =5V, I _O =100μA			0.5	V
	V _{I(on)}	V _O =0.3V, I _I =2mA	3			V
Output Voltage	V _{O(on)}	I _O =10mA, I _I =0.5mA		0.1	0.3	V
Input Current	I _I	V _I =5V			0.18	mA
Output Current	I _{O(off)}	V _{CC} =50V, V _I =0V			0.5	mA
DC Current Gain	G _I	V _O =5V, I _O =5mA	68			
Input Resistor	R ₁		32.9	47	61.1	kΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _E =5mA, f=100MHz		250		MHz

ELECTRICAL CHARACTERISTICS T_{R2} Section @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	V _{I(off)}	V _{CC} =-5V, I _O =-100μA			-0.5	V
	V _{I(on)}	V _O =-0.3V, I _I =-2mA	-3			V
Output Voltage	V _{O(on)}	I _O =-10mA, I _I =-0.5mA		-0.1	-0.3	V
Input Current	I _I	V _I =-5V			-0.18	mA
Output Current	I _{O(off)}	V _{CC} =-50V, V _I =0V			-0.5	mA
DC Current Gain	G _I	V _O =-5V, I _O =-5mA	68			
Input Resistor	R ₁		32.9	47	61.1	kΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	
Gain-Bandwidth Product	f _T	V _{CE} =-10V, I _E =-5mA, f=100MHz		250		MHz

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TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

DTr1(DTC144E)

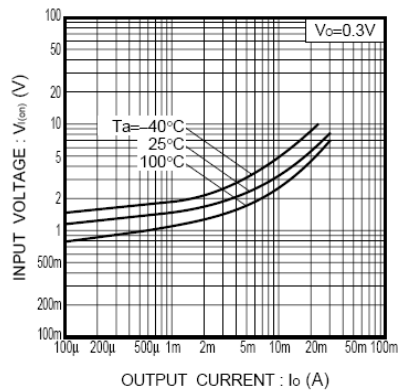


Fig.1 Input voltage vs. output current (ON characteristics)

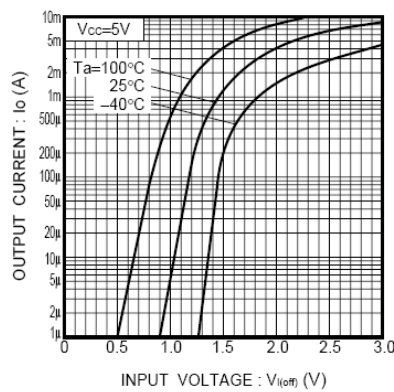


Fig.2 Output current vs. input voltage (OFF characteristics)

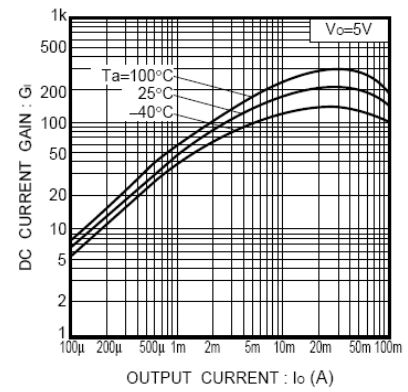


Fig.3 DC current gain vs. output current

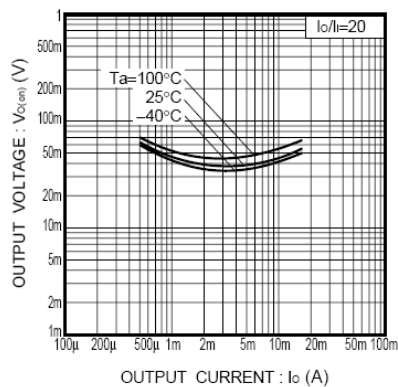


Fig.4 Output voltage vs. output current

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DTr2(DTA144E)

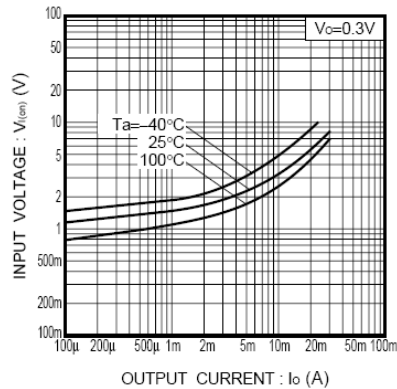


Fig.1 Input voltage vs. output current (ON characteristics)

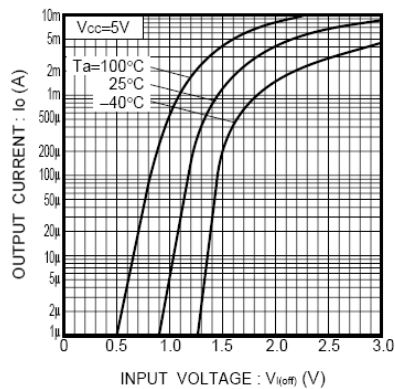


Fig.2 Output current vs. input voltage (OFF characteristics)

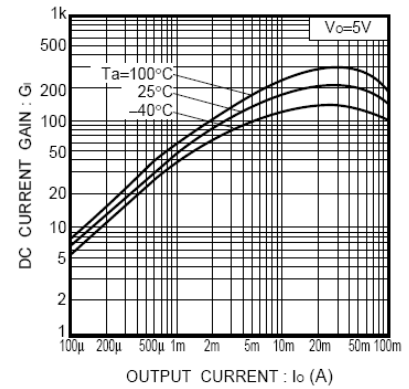
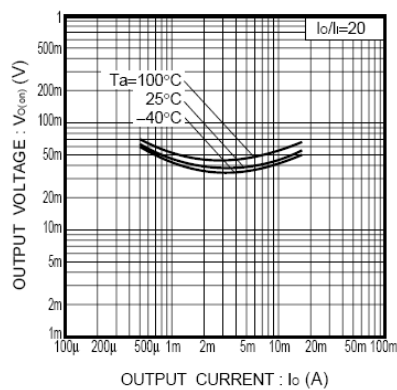


Fig.3 DC current gain vs. output current





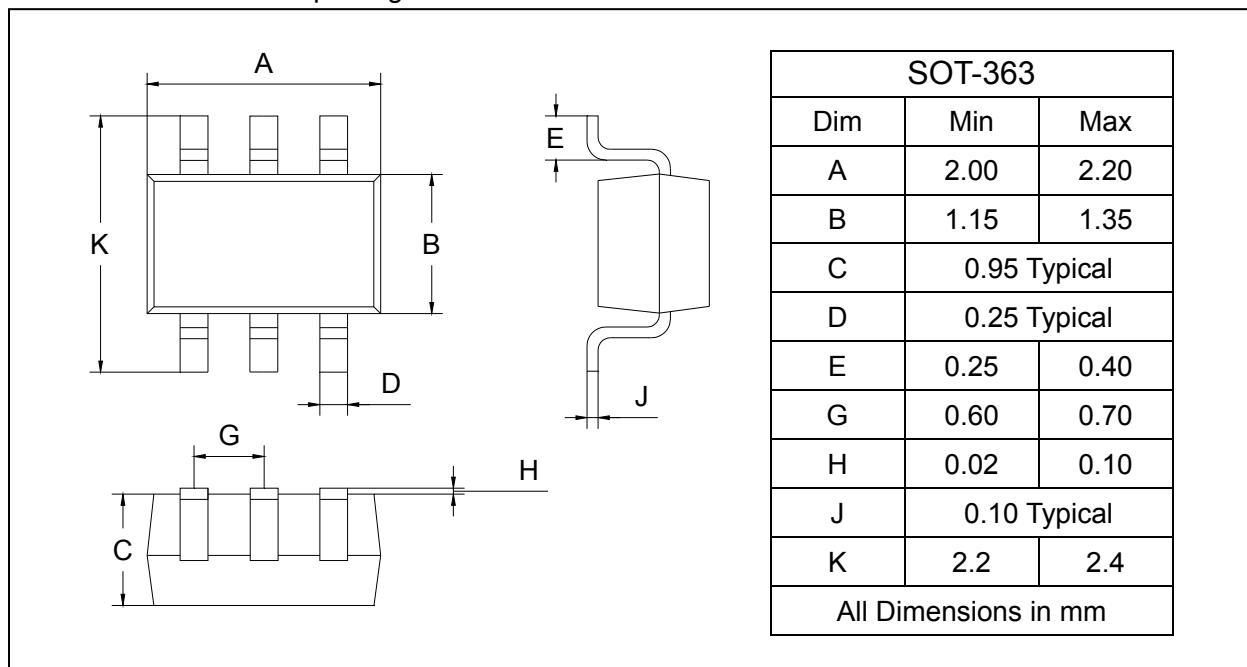
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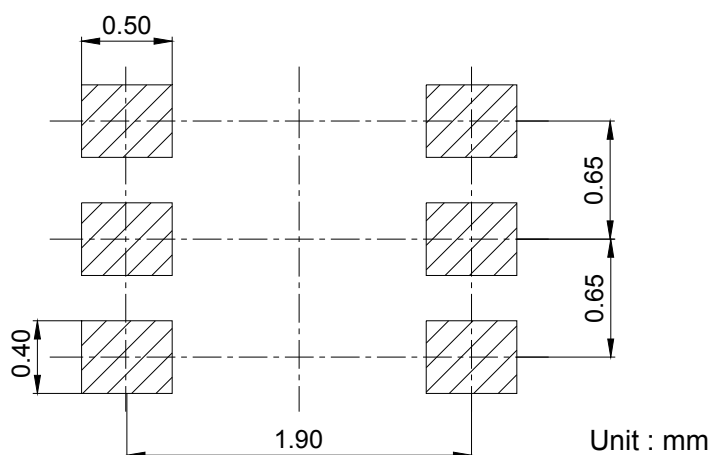
PACKAGE OUTLINE

Plastic surface mounted package

SOT-363



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
UMD12N	SOT-363	3000/Tape&Reel