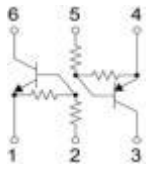
SOT-363



Marking: D10

FEATURES

- l Both the DTC123J chip and DTA123J chip in a package
- l Mounting possible with SOT-363 automatic mounting machines
- l Transistor elements are independent, eliminating interference
- l Mounting cost and area be cut in half

T_{R1} Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-5~12	V
Output current	I_O	100	mA
	$I_{C(MAX)}$	100	
Power dissipation	Pd	150	mW
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	℃

T_{R1} Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	0.5			V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$			1.1		V_O=0.3V, I_O=5mA
Output voltage	$V_{O(on)}$		0.1	0.3	V	I_O/I_I=5mA/0.25mA
Input current	I_I			3.6	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	80				V_O=5V, I_O=10mA
Input resistance	R_1	1.54	2.2	2.86	KΩ	-
Resistance ratio	R_2/R_1	17	21	26		-
Transition frequency	f_T		250		MHz	V_{CE}=10V, I_E=5mA, f=100MHz

T_{R2} Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	-50	V
Input voltage	V_{IN}	-12~5	V
Output current	I_O	-100	mA
	$I_{C(MAX)}$	-100	
Power dissipation	Pd	150	mW
Operation Junction and Storage Temperature Range	T_J,T_{stg}	-55~+150	℃

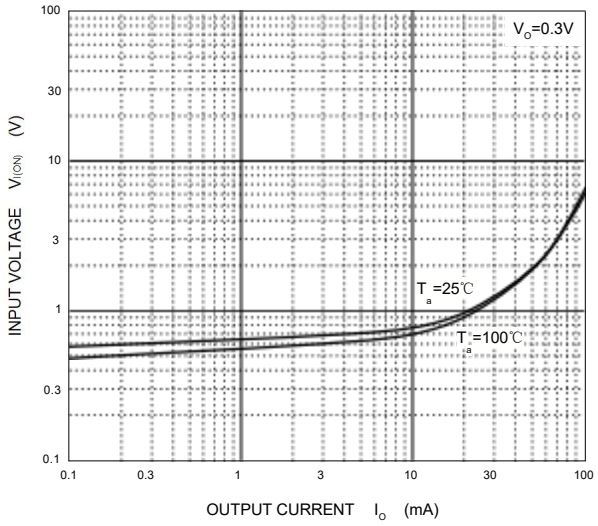
T_{R2} Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	-0.5			V	V_{CC}=-5V, I_O=-100μA
	$V_{I(on)}$			-1.1		V_O=-0.3V, I_O=-5mA
Output voltage	$V_{O(on)}$		-0.1	-0.3	V	I_O/I_I=-5mA/-0.25mA
Input current	I_I			-3.6	mA	V_I=-5V
Output current	$I_{O(off)}$			-0.5	μA	V_{CC}=-50V, V_I=0
DC current gain	G_I	80				V_O=-5V, I_O=-10mA
Input resistance	R_1	1.54	2.2	2.86	KΩ	-
Resistance ratio	R_2/R_1	17	21	26		-
Transition frequency	f_T		250		MHz	V_{CE}=-10V, I_E=-5mA, f=100MHz

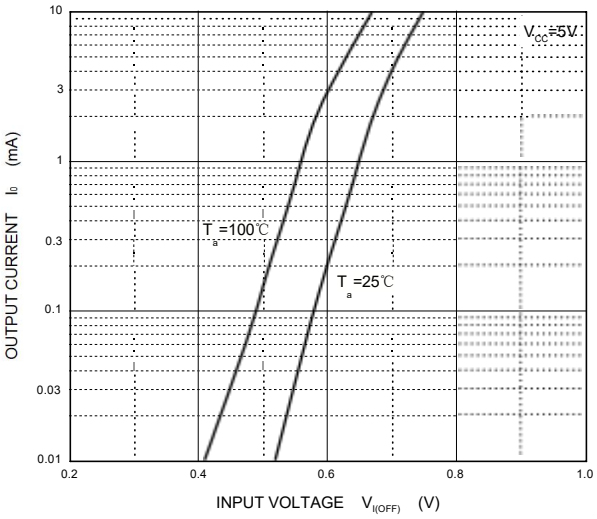
Typical Characteristics

UMD10N(NPN)

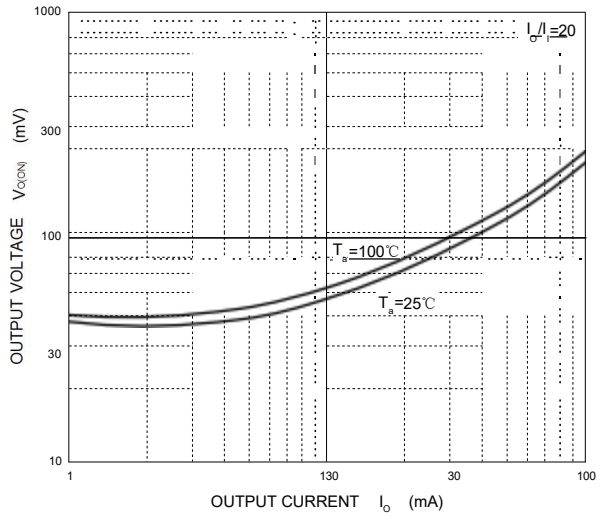
ON Characteristics



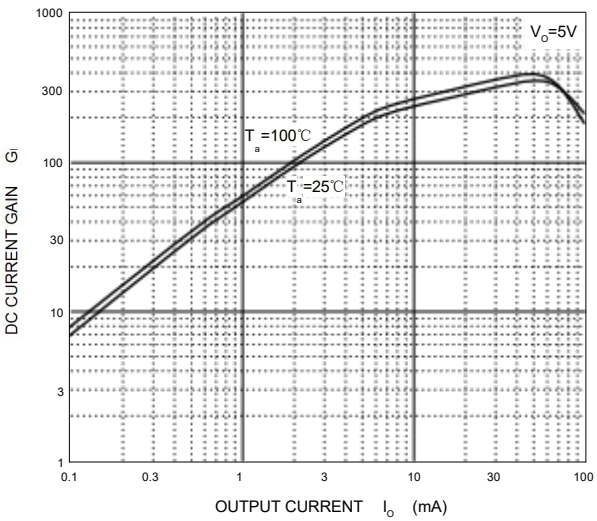
OFF Characteristics



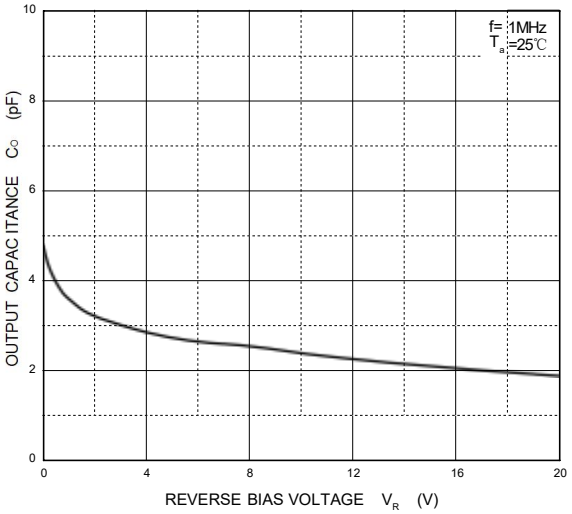
$V_{O(ON)}$ —— I_O



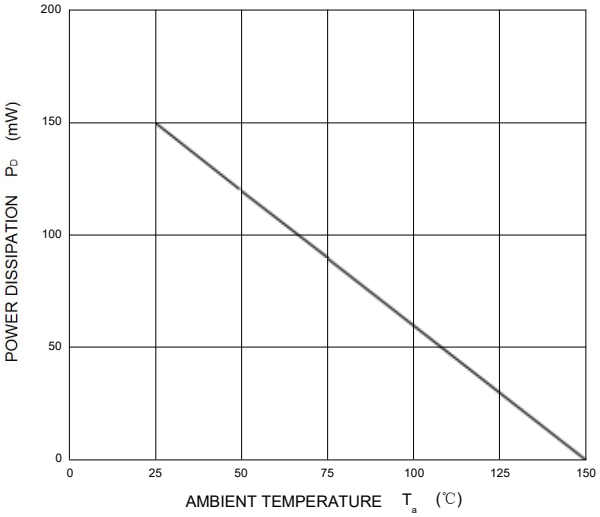
G_I —— I_O



C_O —— V_R



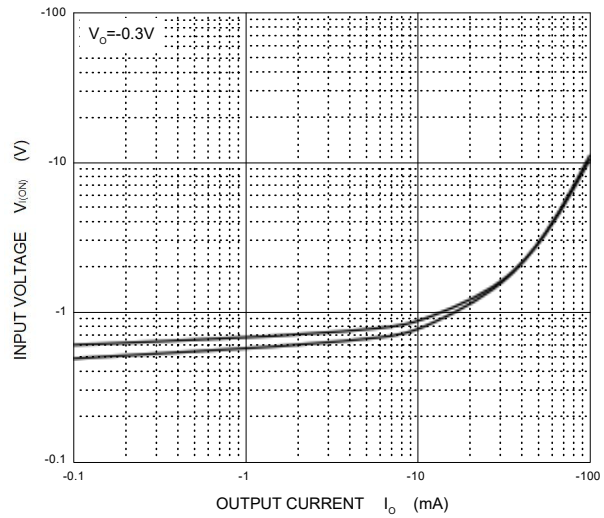
P_D —— T_a



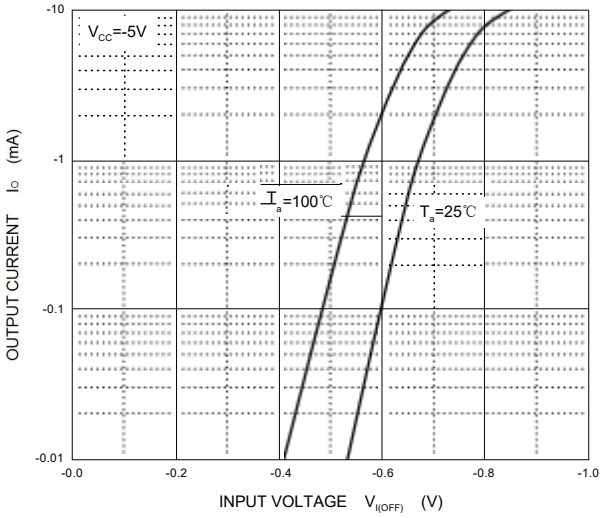
Typical Characteristics

UMD10N(PNP)

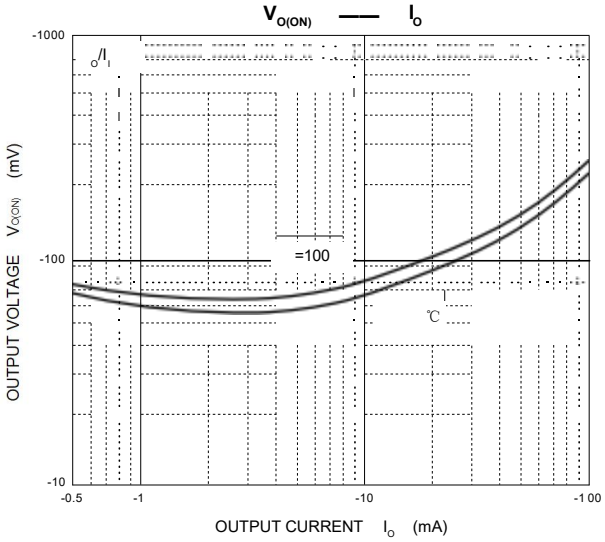
ON Characteristics



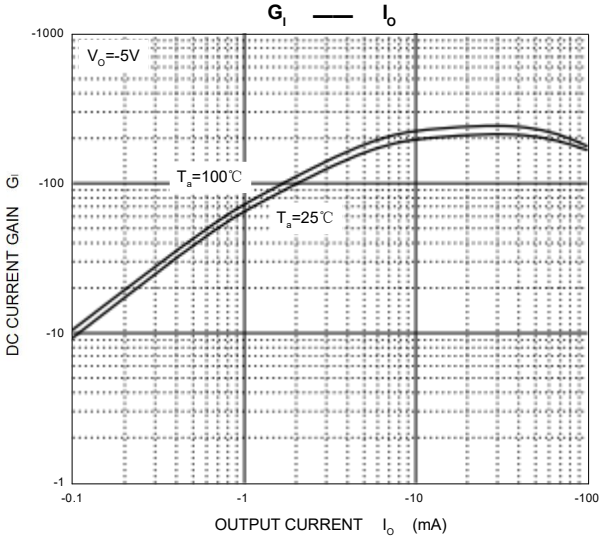
OFF Characteristics



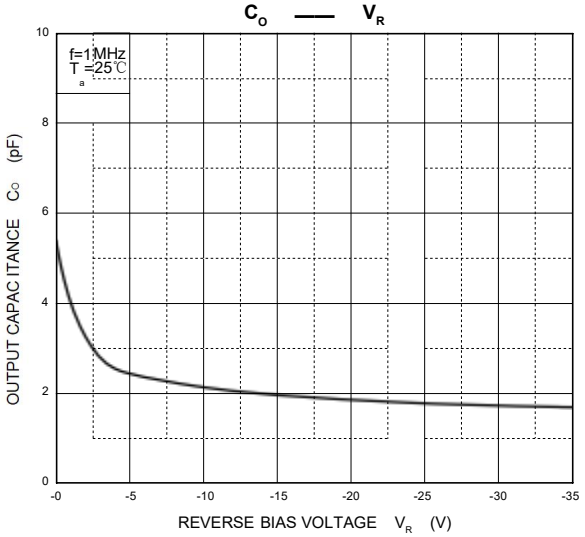
$V_{O(ON)}$ —— I_O



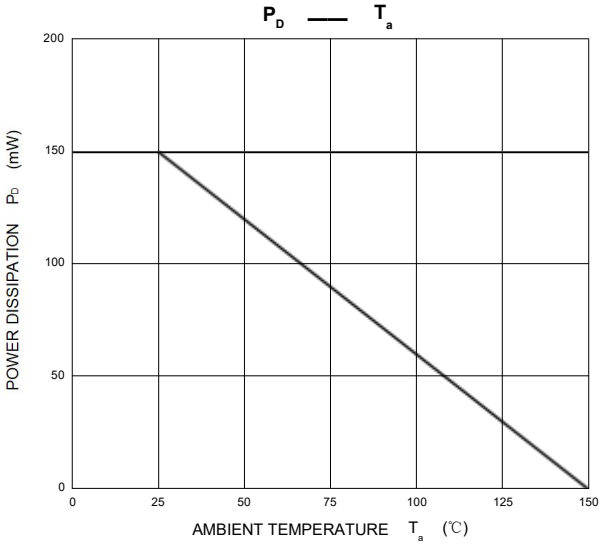
G_I —— I_O



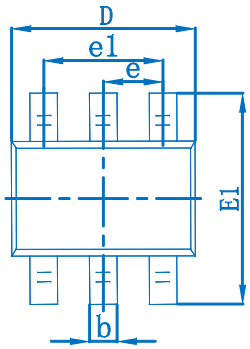
C_O —— V_R

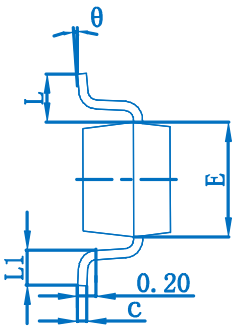


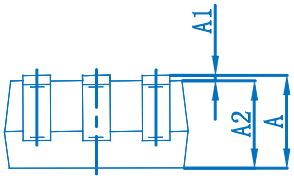
P_D —— T_a



SOT-363 Package Outline Dimensions

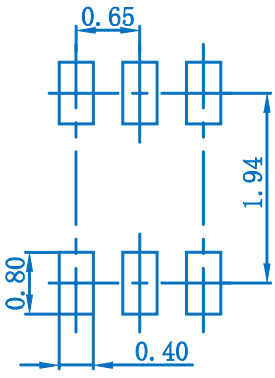






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-363 Suggested Pad Layout



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.