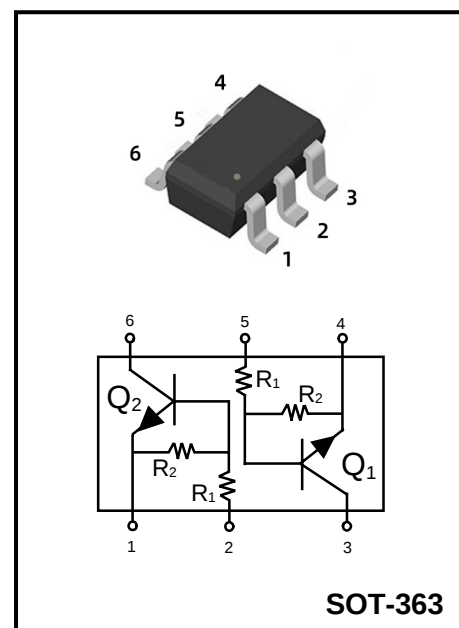


Dual Bias Resistor Transistors

NPN Silicon Surface Mount Transistors
with Monolithic Bias Resistor Network

The BRT (Bias Resistor Transistor) contains a single transistor with a monolithic bias network consisting of two resistors; a series base resistor and a base-emitter resistor. These digital transistors are designed to replace a single device and its external resistor bias network. The BRT eliminates these individual components by integrating them into a single device.

- ◆Simplifies Circuit Design
- ◆Reduces Board Space
- ◆Reduces Component Count
- ◆We declare that the material of product compliance with RoHS requirements.



Marking Code	
UMH13N	7K

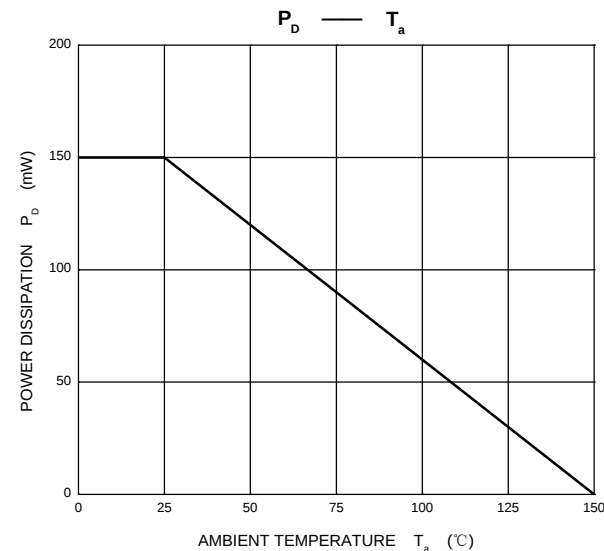
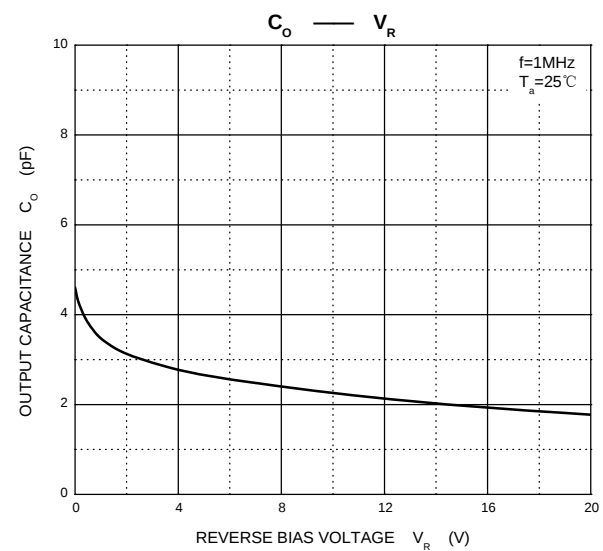
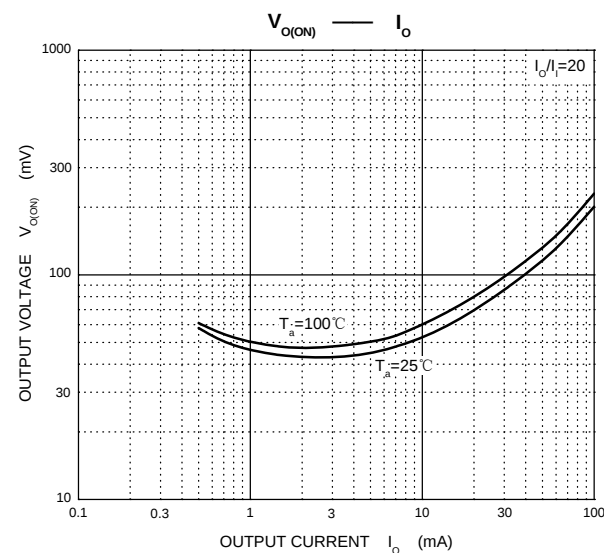
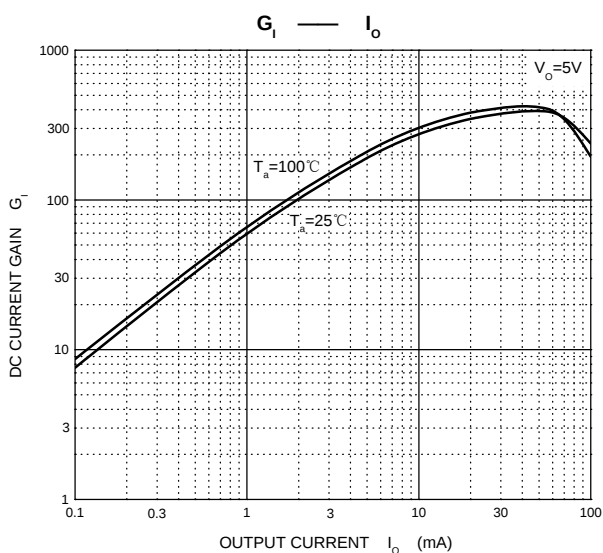
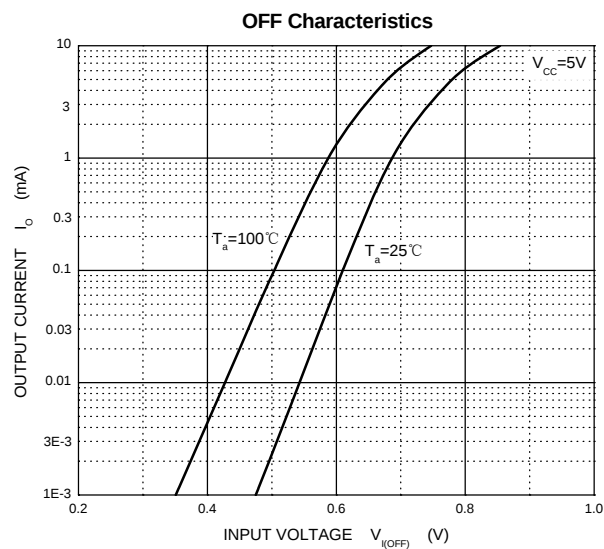
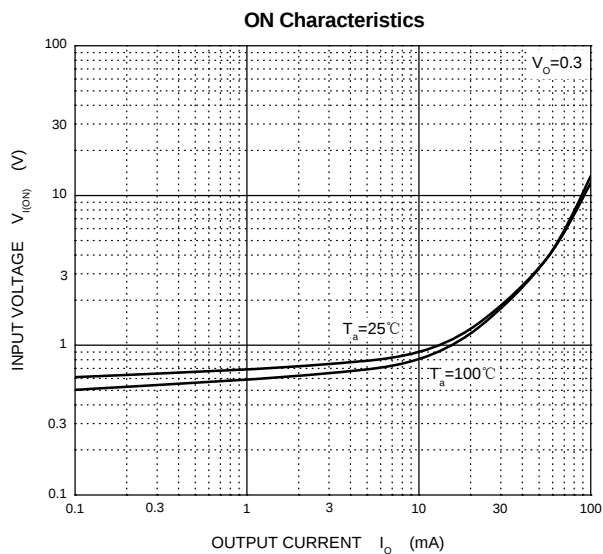
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	50	V
V _i	Input Voltage	-5~+30	V
I _O	Output Current	100	mA
P _D	Total Power Dissipation	150	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

ELECTRICAL CHARACTERISTICS PER DEVICE(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Input turn-on voltage	V _{i(on)}	V _O =0.3V, I _O =5mA			1.3	V
Input cut-off voltage	V _{i(off)}	V _{CC} =5V, I _O =100μA	0.5			V
Output voltage	V _{O(on)}	I _O =5mA, I _i =0.25mA			0.3	V
Input cut-off current	I _i	V _i =5V			1.8	mA
Output cut-off current	I _{O(off)}	V _{CC} =50V, V _i =0			0.5	μA
DC current gain	G _i	V _O =5V, I _O =10mA	80			
Transition frequency	f _T	V _O =10V, I _O =5mA, f=100MHz		250		MHz
Input resistance	R ₁		3.33	4.7	6.11	kΩ
Resistance ratio	R ₁ /R ₂		0.055	0.1	0.185	-

Typical Characteristics



Ordering information

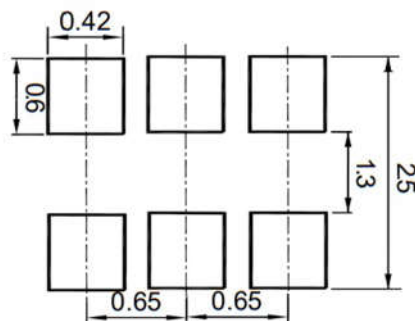
Package	Packing Description	Packing Quantity
SOT-363	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOT-363

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
A1	-	0.1	-	3.94
bp	0.20	0.30	7.87	11.81
c	0.10	0.25	3.94	9.84
D	1.8	2.2	70.87	86.61
E	1.15	1.35	45.28	53.15
e	1.3		51.18	
e1	0.65		25.6	
HE	2.0	2.2	78.74	86.6
Lp	0.15	0.45	5.90	17.71
Q	0.15	0.25	5.90	9.84
v	0.2		7.78	
w	0.2		7.78	
y	0.1		3.94	

The recommended mounting pad size



Disclaimer

The information presented in this document is for reference only. Guangdong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.