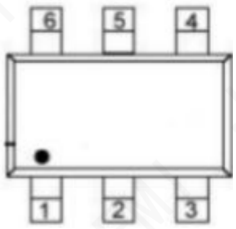
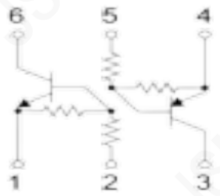
Description

The PUMD2,115-JSM is a dual digital transistor integrating NPN and PNPchips in an SOT-363 package. It features independent transistor elements to avoid interference, supports automatic mounting, and reduces both installation cost and space usage, delivering reliable switching performance for electronic circuits.



Features

- Integrates NPN and PNP chips in one package
- Independent transistor elements, no mutual interference
- Compatible with SOT-363 automatic mounting machines
- Cuts mounting cost and area by 50%
- Wide operating temperature range: -55~+150℃



Applications

- Switching circuits in consumer electronics (e.g., small appliances, wearables)
- Signal amplification in low-power electronic devices
- Driver circuits for LEDs and small motors
- Space-constrained PCB designs requiring dual- transistor functionality
- Industrial control systems with low-current switching needs

Maximum Ratings (TA=25℃)

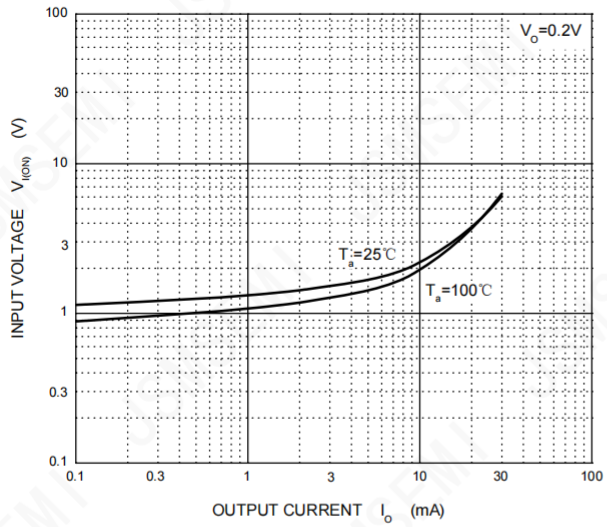
Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10~40	V
Output current	I_O	30	mA
	$I_{C(MAX)}$	100	
Power dissipation	Pd	150	mW
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	℃

Electrical Characteristics(Ta=25℃unless otherwise specified)

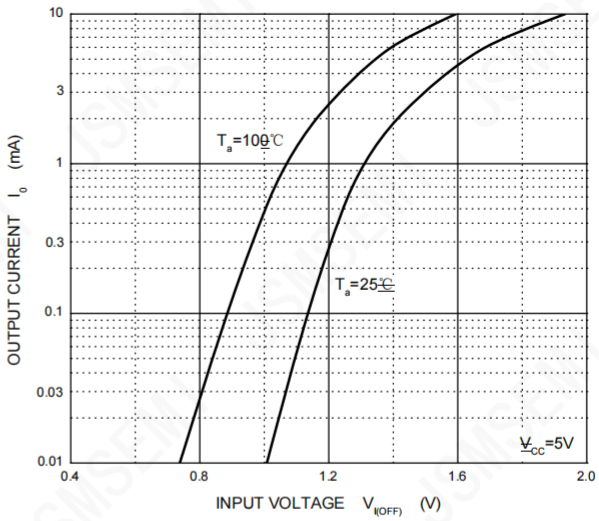
Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	0.5			V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$			3		V_O=0.2V, I_O=5mA
Output voltage	$V_{O(on)}$		0.1	0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.36	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	56				V_O=5V, I_O=5mA
Input resistance	R_1	15.4	22	28.6	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

Typical Performance Curves

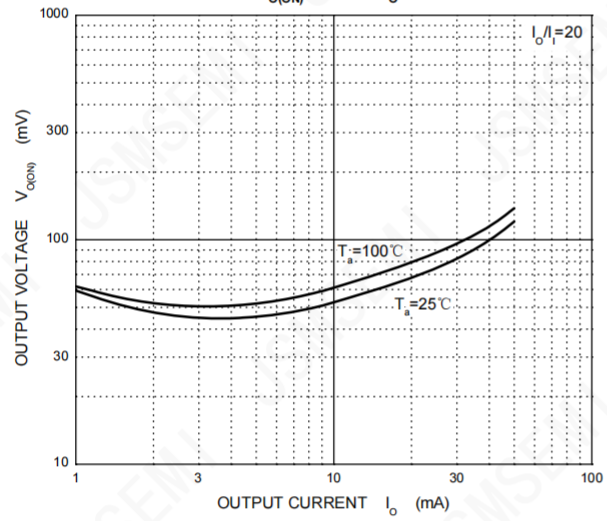
ON Characteristics



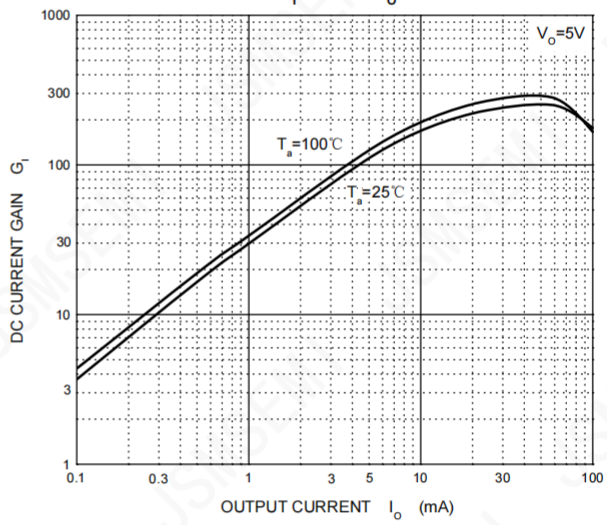
OFF Characteristics



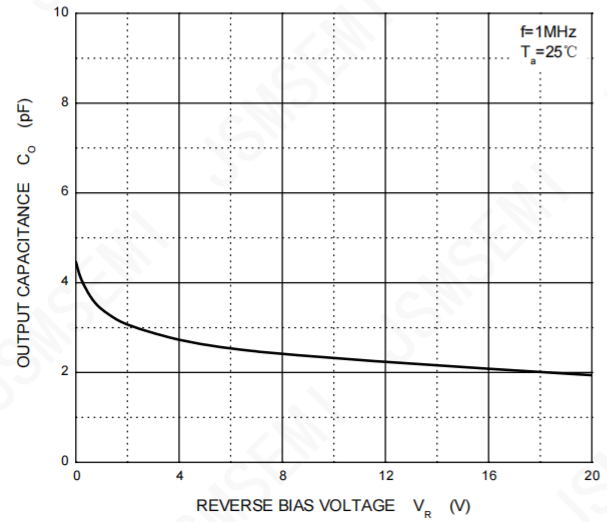
$V_{O(ON)}$ — I_O



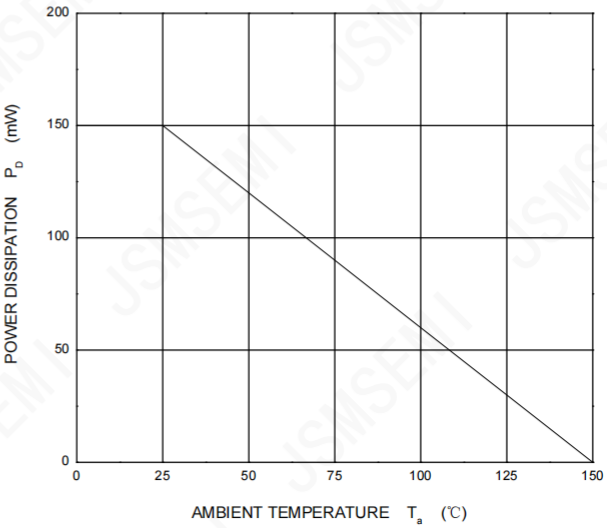
G_I — I_O

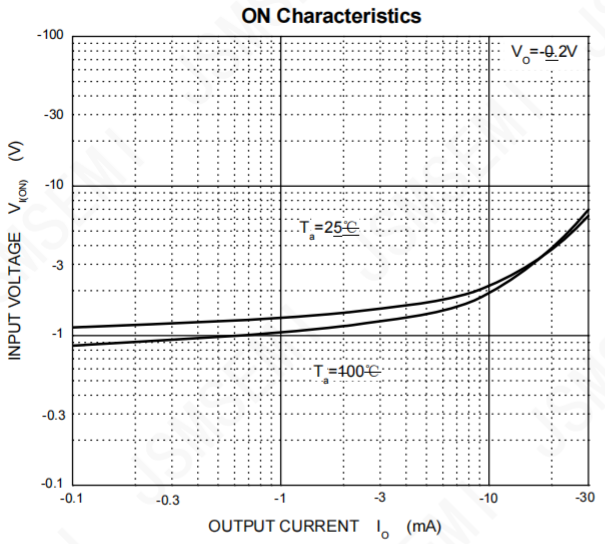


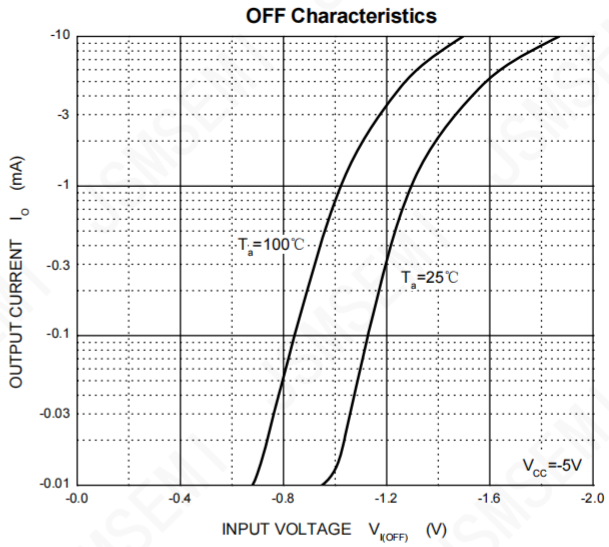
C_O — V_R

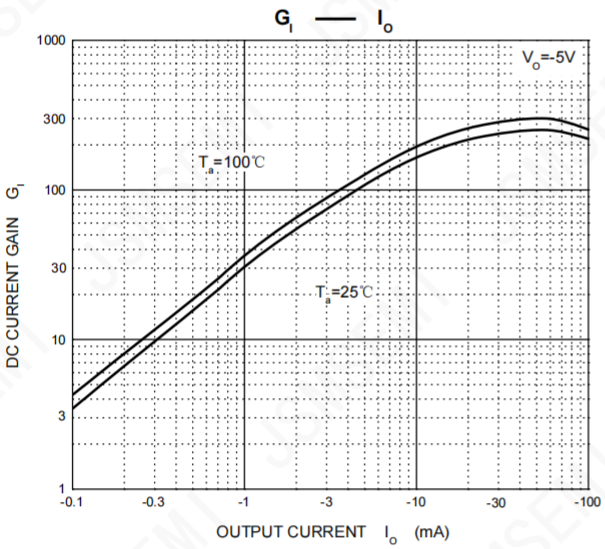


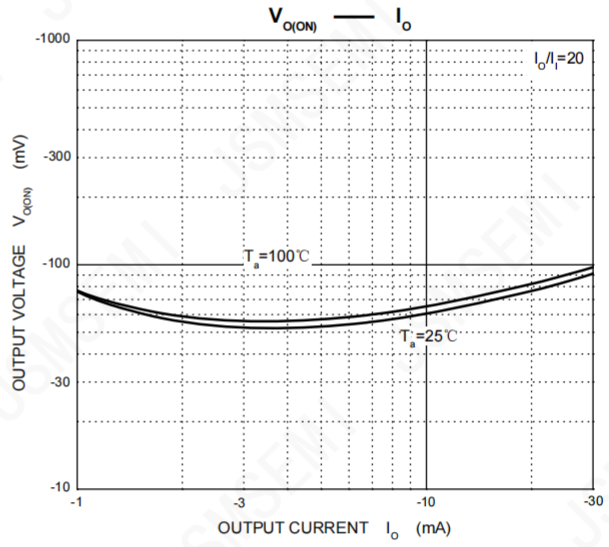
P_D — T_a

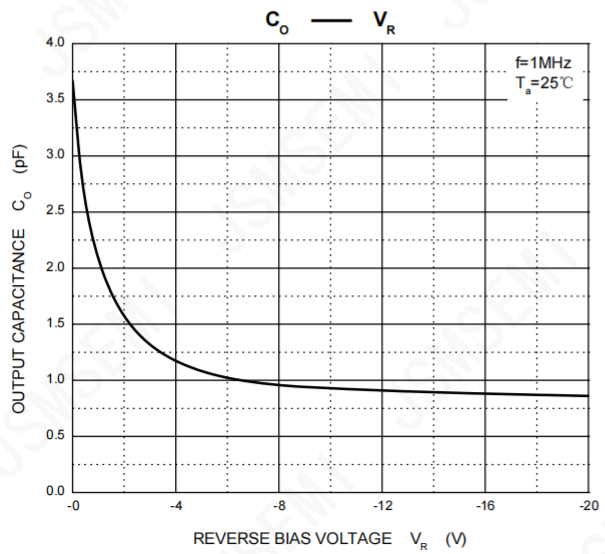


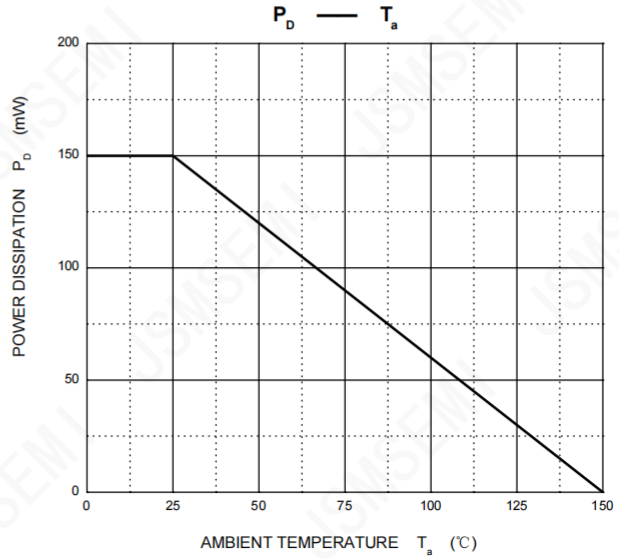

ON Characteristics
V_O=-0.2V
T_a=25℃
T_a=100℃
INPUT VOLTAGE $V_{I(ON)}$ (V)
OUTPUT CURRENT I_O (mA)
-100
-30
-10
-3
-1
-0.3
-0.1
-0.1
-0.3
-1
-3
-10
-30


OFF Characteristics
T_a=100℃
T_a=25℃
V_{CC}=-5V
OUTPUT CURRENT I_O (mA)
INPUT VOLTAGE $V_{I(OFF)}$ (V)
-10
-3
-1
-0.3
-0.1
-0.03
-0.01
-0.0
-0.4
-0.8
-1.2
-1.6
-2.0

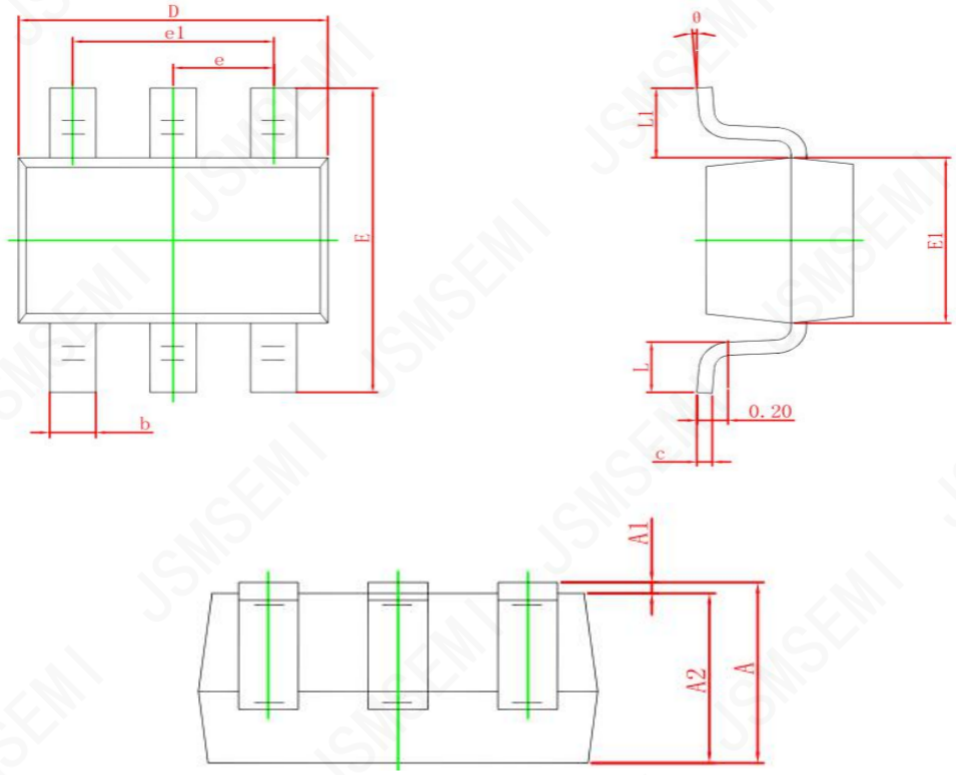

G_I — I_O
V_O=-5V
T_a=100℃
T_a=25℃
DC CURRENT GAIN G_I
OUTPUT CURRENT I_O (mA)
1000
300
100
30
10
3
1
-0.1
-0.3
-1
-3
-10
-30
-100


$V_{O(ON)}$ — I_O
I_O/I_I=20
T_a=100℃
T_a=25℃
OUTPUT VOLTAGE $V_{O(ON)}$ (mV)
OUTPUT CURRENT I_O (mA)
-1000
-300
-100
-30
-10
-1
-3
-10
-30


C_O — V_R
f=1MHz
T_a=25℃
OUTPUT CAPACITANCE C_O (pF)
REVERSE BIAS VOLTAGE V_R (V)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0
-4
-8
-12
-16
-20


P_D — T_a
POWER DISSIPATION P_D (mW)
AMBIENT TEMPERATURE T_a (℃)
200
150
100
50
0
0
25
50
75
100
125
150

SOT-363 Package Qutline Dimensions



Symbol	Dim in mm		
	Min	Nor	Max
A	0.90	1.00	1.10
A1	0.00	0.05	0.10
A2	0.90	0.95	1.00
b	0.15	0.25	0.35
c	0.08	0.12	0.15
D	2.05	2.10	2.25
E	2.15	2.30	2.45
E1	1.15	1.25	1.35
e	0.650TPY.		
e1	1.2	1.3	1.4
L	0.26	0.36	0.46
L1	0.525REF.		
θ	0°	4°	8°

Revision History

Rev.	Change	Date
V1.0	Initial version	6/27/2021

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