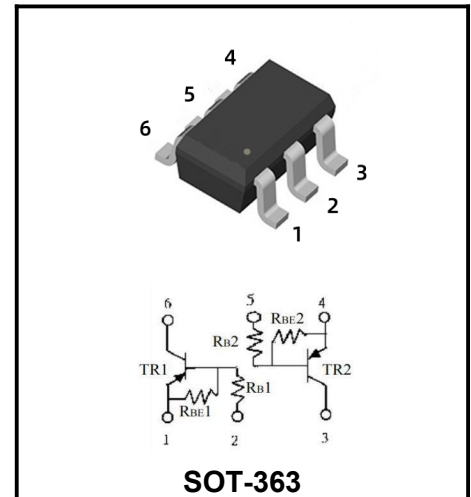


Applications

for switching and interface circuit
and drive circuit applications

Resistor Values

TYPE	R1(K)	R2(K)	MARKING
MMUN5111DW	10	10	0A
MMUN5112DW	22	22	0B
MMUN5113DW	47	47	0C
MMUN5114DW	10	47	0D
MMUN5115DW	10	∞	0E
MMUN5116DW	4.7	∞	0F
MMUN5130DW	1	1	0G
MMUN5131DW	2.2	2.2	0H
MMUN5132DW	4.7	4.7	0J
MMUN5133DW	4.7	4.7	0K
MMUN5134DW	22	47	0L
MMUN5135DW	2.2	47	0M



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	50	V
Collector Emitter Voltage	$-V_{CEO}$	50	V
Collector Current	$-I_C$	100	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_s	- 55 to + 150	°C

Electrical Characteristics (Ta=25℃ unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit
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Off Characteristics

Collector–Base Cutoff Current ($V_{CB} = 50\text{ V}$, $I_E = 0$)	I_{CBO}	–	–	100	nAdc
Collector–Emitter Cutoff Current ($V_{CE} = 50\text{ V}$, $I_B = 0$)	I_{CEO}	–	–	500	nAdc
Emitter–Base Cutoff Current ($V_{EB} = 6.0\text{ V}$, $I_C = 0$)	I_{EBO}	–	–	0.5	mAdc
MUN5111DW		–	–	0.2	
MUN5112DW		–	–	0.1	
MUN5113DW		–	–	0.2	
MUN5114DW		–	–	0.9	
MUN5115DW		–	–	1.9	
MUN5116DW		–	–	4.3	
MUN5130DW		–	–	2.3	
MUN5131DW		–	–	1.5	
MUN5132DW		–	–	0.18	
MUN5133DW		–	–	0.13	
MUN5134DW		–	–	0.2	
MUN5135DW		–	–		
Collector–Base Breakdown Voltage ($I_C = 10\text{ }\mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	50	–	–	Vdc
Collector–Emitter Breakdown Voltage (Note 4) ($I_C = 2.0\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	50	–	–	Vdc

ON Characteristics(Note 4)

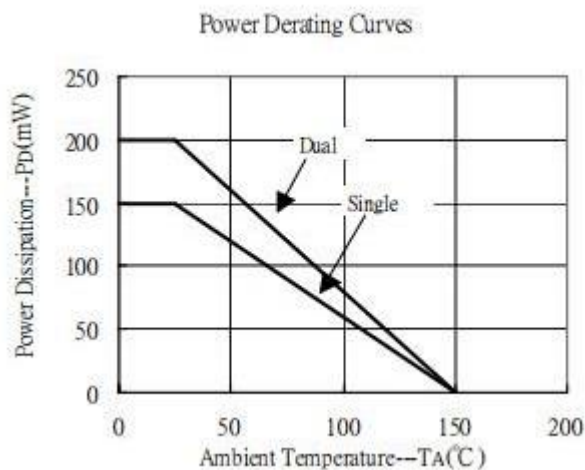
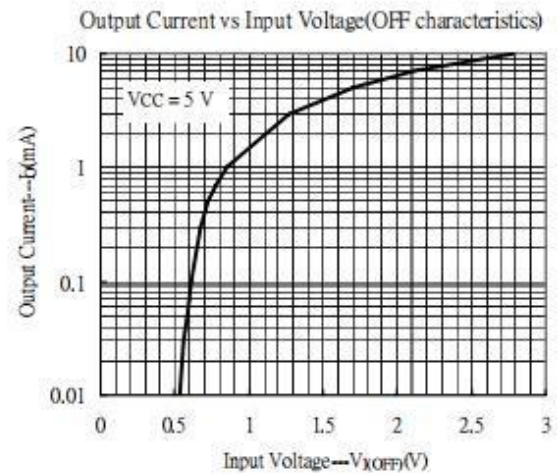
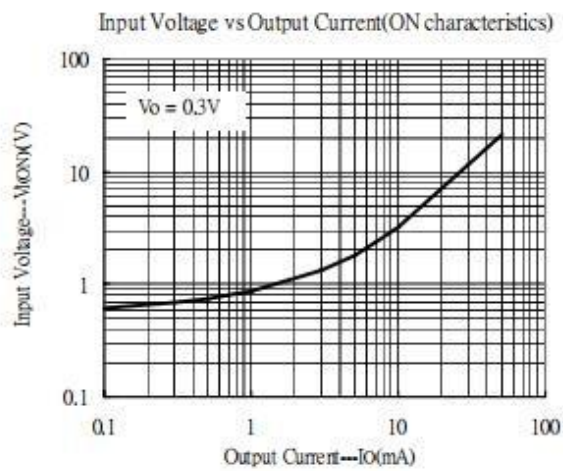
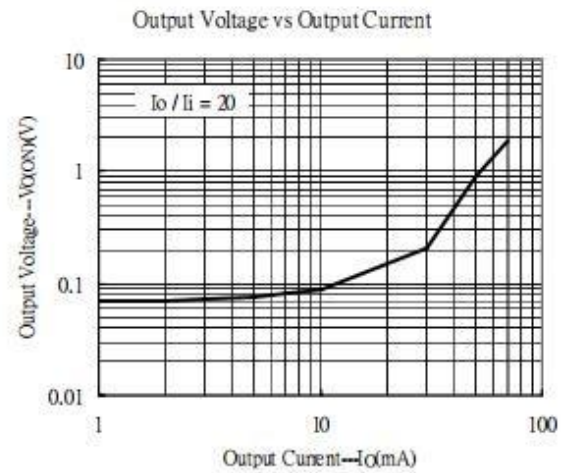
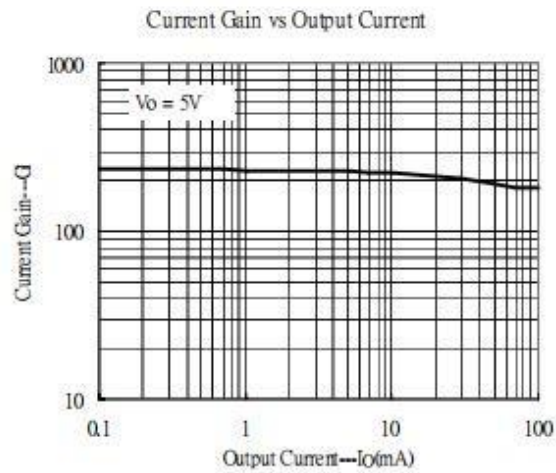
DC Current Gain ($V_{CE} = 10\text{ V}$, $I_C = 5.0\text{ mA}$)	MUN5111DW MUN5112DW MUN5113DW MUN5114DW MUN5115DW MUN5116DW MUN5130DW MUN5131DW MUN5132DW MUN5133DW MUN5134DW MUN5135DW	h_{FE}	35 60 80 80 160 160 3.0 8.0 15 80 80 80	60 100 140 140 250 250 5.0 15 27 140 130 140	250 – – – – – – – – – – – –	
Collector–Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_E = 0.3\text{ mA}$) ($I_C = 10\text{ mA}$, $I_B = 5\text{ mA}$) MUN5130DW/MUN5131DW ($I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$) MUN5132DW/MUN5134DW		$V_{CE(sat)}$	–	–	0.25	Vdc
Output Voltage (on) ($V_{CC} = 5.0\text{ V}$, $V_B = 2.5\text{ V}$, $R_L = 1.0\text{ k}\Omega$) ($V_{CC} = 5.0\text{ V}$, $V_B = 3.5\text{ V}$, $R_L = 1.0\text{ k}\Omega$)	MUN5111DW MUN5112DW MUN5114DW MUN5115DW MUN5116DW MUN5130DW MUN5131DW MUN5132DW MUN5133DW MUN5134DW MUN5135DW MUN5113DW	V_{OL}	– – – – – – – – – – – –	– – – – – – – – – – – –	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	Vdc

1. Pulse Test: Pulse Width < 300 μs , Duty Cycle < 2.0%

Electrical Characteristics (Ta=25℃ unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage (off) (V _{CC} = 5.0 V, V _B = 0.5 V, R _L = 1.0 kΩ) (V _{CC} = 5.0 V, V _B = 0.050 V, R _L = 1.0 kΩ) MUN5130DW (V _{CC} = 5.0 V, V _B = 0.25 V, R _L = 1.0 kΩ) MUN5115DW MUN5116DW/ MUN5131DW/ MUN5132DW	V _{OH}	4.9	—	—	Vdc
Input Resistor MUN5111DW MUN5112DW MUN5113DW MUN5114DW MUN5115DW MUN5116DW MUN5130DW MUN5131D W MUN5132DW MUN5133DW MUN5134DW MUN5135DW	R1	7.0 15.4 32.9 7.0 7.0 3.3 0.7 1.5 3.3 3.3 15.4 1.54	10 22 47 10 10 4.7 1.0 2.2 4.7 4.7 22 2.2	13 28.6 61.1 13 13 6.1 1.3 2.9 6.1 6.1 28.6 2.86	kΩ
Resistor Ratio MUN5111DW/MUN5112DW/MUN5113DW/ MUN5136DW MUN5114DW MUN5115DW/MUN5116DW MUN5130DW/MUN5131DW/MUN5132DW MUN5133DW MUN5134DW MUN5135DW	R ₁ /R ₂	0.8 0.17 — 0.8 0.055 0.38 0.038	1.0 0.21 — 1.0 0.1 0.47 0.047	1.2 0.25 — 1.2 0.185 0.56 0.056	

Typical Characteristics



Ordering information

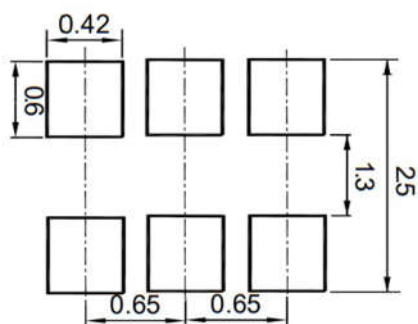
Package	Packing Description	Packing Quantity
SOT-363	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

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



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