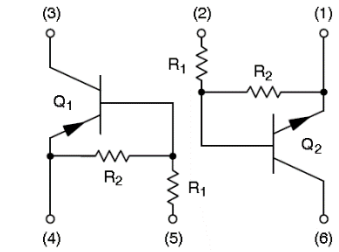
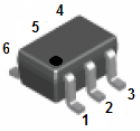
UNM2N

Dual Digital Transistor(NPN+PNP)

Features

- Simplifies circuit design
- Reduces board space
- Reduces component count
- R_1 = 22kΩ, R_2 = 47kΩ





SOT-363

Mechanical Data

- Case: SOT-363
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
UNM2N	SOT-363	3000 pcs / Tape & Reel	34

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value		Unit
		Q1	Q2	
Collector-Base Breakdown Voltage	V_{CBO}	-50	50	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-50	50	V
Collector Current (Continuous)	I_C	-100	100	mA
Input Forward Voltage	$V_{IN(fwd)}$	-40	40	V
Input Reverse Voltage	$V_{IN(rev)}$	-7	7	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation(T_A = 25°C) *1	P_D	250	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	493	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	188	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Notes:

1、 FR 4 @ Minimum Pad.

2、 Pulsed Condition: Pulse Width = 300 ms, Duty Cycle 2%

Electrical Characteristics-Q2 (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Cut-off Current	I_{CBO}	V_{CB} = 50V, I_E = 0	-	-	0.1	μA
Collector Cut-off Current	I_{CEO}	V_{CE} = 50V, I_B = 0	-	-	0.5	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 6V, I_C = 0	-	-	0.13	mA
Collector-Base Breakdown Voltage	V_{CBO}	I_C = 10μA, I_E = 0)	50	-	-	V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C = 2mA, I_B = 0	50	-	-	V
DC Current Gain *2	h_{FE}	V_{CE} = 10V, I_C = 5mA	80	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 1mA	-	-	0.25	V
Input voltage	$V_{I(ON)}$	V_{CE} = 0.2V, I_C = 3mA	-	1.3	-	V
Input voltage	$V_{I(OFF)}$	V_{CE} = 5V, I_C = 0.1mA	-	0.8	-	V
Output Voltage (On)	V_{OL}	V_{CC} = 5V, V_B = 2.5V R_L = 1kΩ	-	-	0.2	V
Output Voltage (Off)	V_{OH}	V_{CC} = 5V, V_B = 0.5V R_L = 1kΩ	4.9	-	-	V
Input Resistor	R_1		15.4	22	28.6	kΩ
Resistance ratio	R1/R2		0.38	0.47	0.56	-

Electrical Characteristics-Q1 (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Cut-off Current	I_{CBO}	V_{CB} = -50V, I_E = 0	-	-	-0.1	μA
Collector Cut-off Current	I_{CEO}	V_{CE} = -50V, I_B = 0	-	-	-0.5	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = -6V, I_C = 0	-	-	-0.13	mA
Collector-Base Breakdown Voltage	V_{CBO}	I_C = -10μA, I_E = 0)	-50	-	-	V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C = -2mA, I_B = 0	-50	-	-	V
DC Current Gain *2	h_{FE}	V_{CE} = -10V, I_C = -5mA	80	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -10mA, I_B = -1mA	-	-	-0.25	V
Input voltage	$V_{I(ON)}$	V_{CE} = -0.2V, I_C = -3mA	-	-1.3	-	V
Input voltage	$V_{I(OFF)}$	V_{CE} = -5V, I_C = -0.1mA	-	-0.9	-	V
Output Voltage (On)	V_{OL}	V_{CC} = -5V, V_B =- 2.5V R_L = 1kΩ	-	-	0.2	V
Output Voltage (Off)	V_{OH}	V_{CC} = -5V, V_B = -0.5V R_L = 1kΩ	4.9	-	-	V
Input Resistor	R_1		15.4	22	28.6	kΩ
Resistance ratio	R1/R2		0.38	0.47	0.56	-

Ratings and Characteristics Curves-Q2 (@ T_A = 25°C unless otherwise specified)

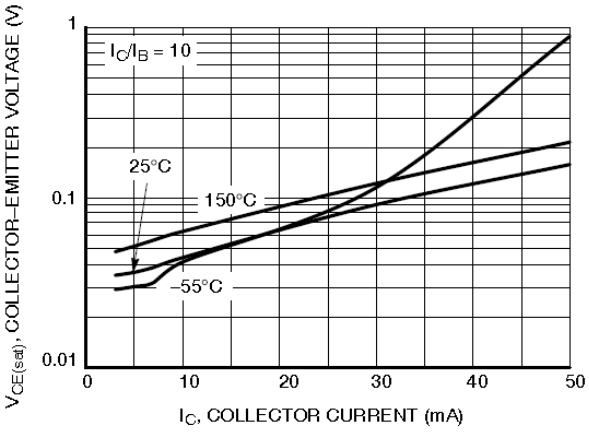


Figure 1. $V_{CE(sat)}$ vs. I_C

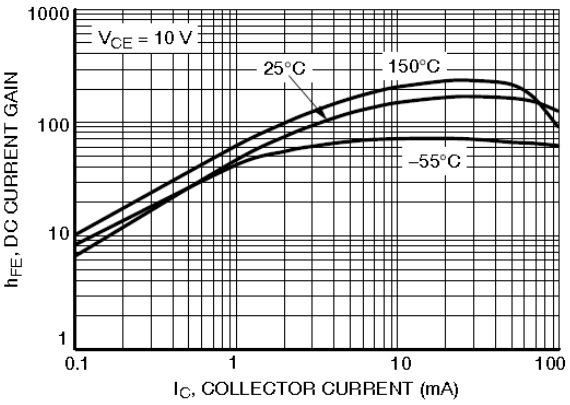


Figure 2. DC Current Gain

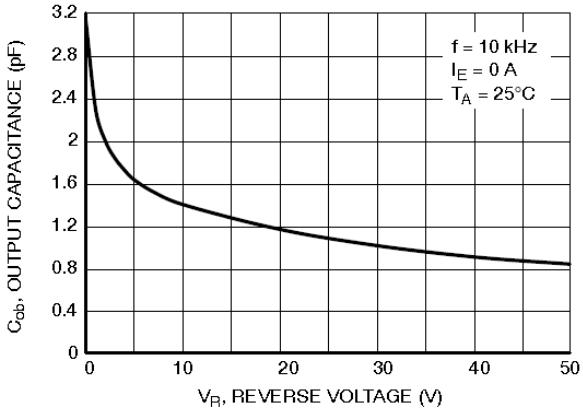


Figure 3. Output Capacitance

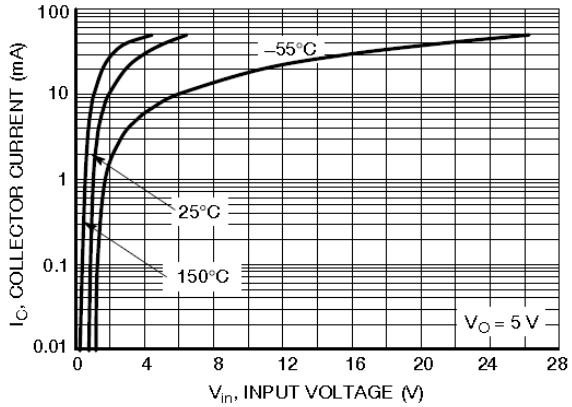


Figure 4. Output Current vs. Input Voltage

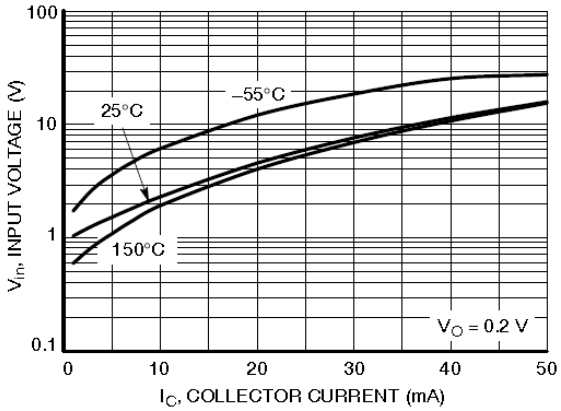


Figure 5. Input Voltage vs. Output Current

Ratings and Characteristics Curves-Q1 (@ T_A = 25°C unless otherwise specified)

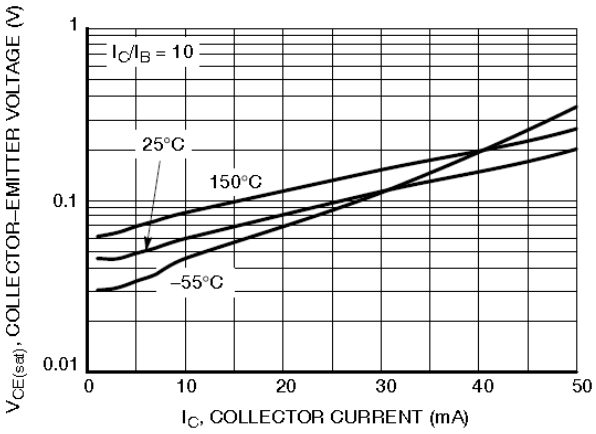


Figure 1. $V_{CE(sat)}$ vs. I_C

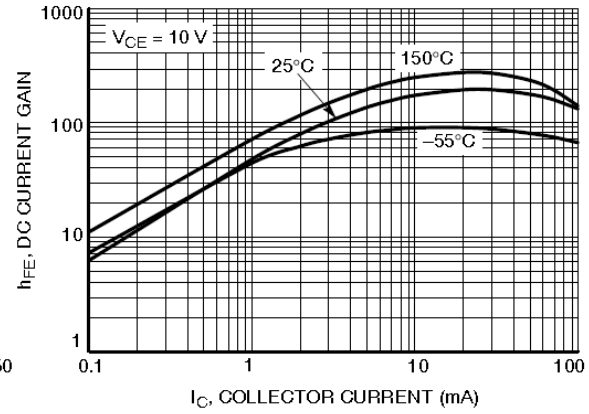


Figure 2. DC Current Gain

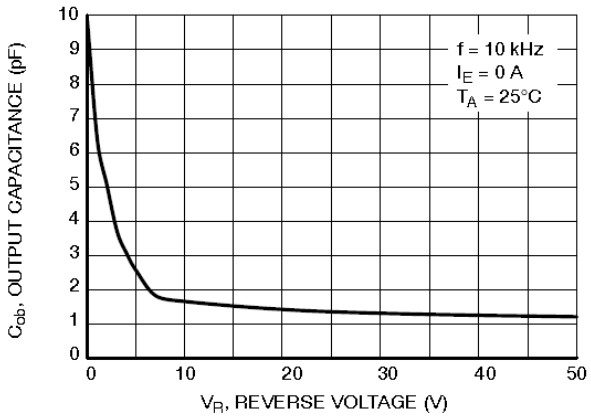


Figure 3. Output Capacitance

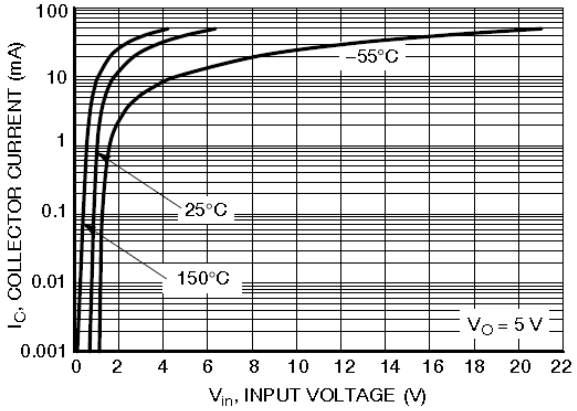


Figure 4. Output Current vs. Input Voltage

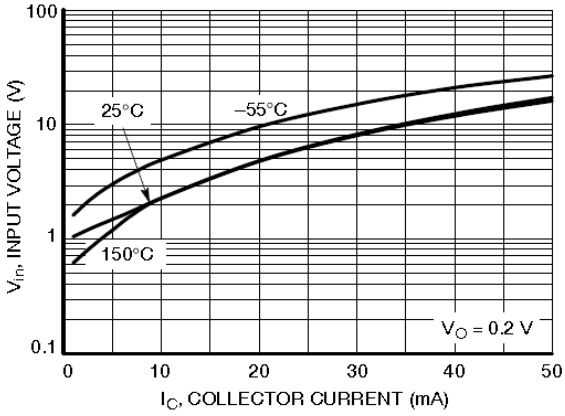
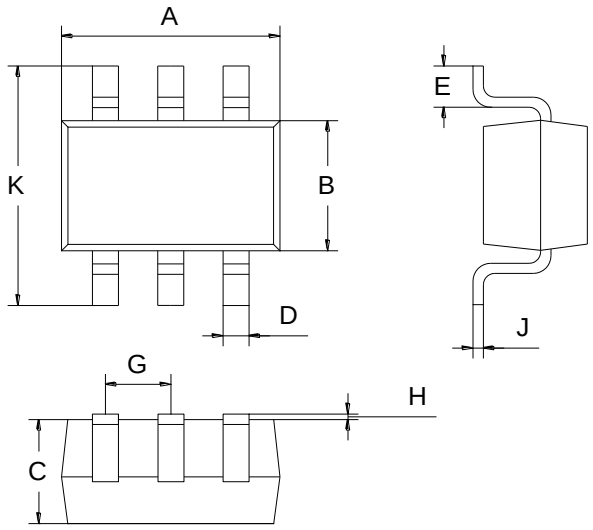


Figure 5. Input Voltage vs. Output Current

Package Outline Dimensions (Unit: mm)



SOT-363		
Dimension	**Min.**	**Max.**
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Mounting Pad Layout (Unit: mm)

SOT-363