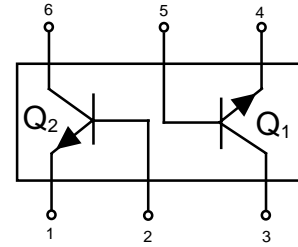




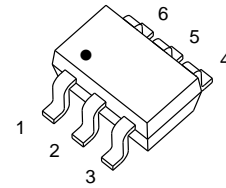
UMX1N Dual General Purpose Transistors

NPN Duals

These transistors are designed for general purpose amplifier applications. They are housed in the SOT-363/SC-88 which is designed for low power surface mount applications.



Marking : 1F



SOT-363

Q₁ MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector- Base Voltage	V _{CB0}	50	V
Collector- Emitter Voltage	V _{CE0}	45	V
Emitter- Base Voltage	V _{EBO}	6	mA
Collector Current	I _C	100	mA
Base Current	I _B	20	mA

Q₂ MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector- Base Voltage	V _{CB0}	50	V
Collector- Emitter Voltage	V _{CE0}	45	V
Emitter- Base Voltage	V _{EBO}	6	mA
Collector Current	I _C	100	mA
Base Current	I _B	20	mA

Q₁ Q₂ MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P _C *	380	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	- 55 ~ 150	°C

* Total Raing. FR- 5 = 1.0 x 0.75 x 0.062 in



Q₁ ELECTRICAL CHARACTERISTICS (T_a=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut - off Current	I _{CBO}	V _{CB} =30V, I _E =0	-	-	0.1	μA
Emitter Cut - off Current	I _{EBO}	V _{EB} =5V, I _C =0	-	-	0.1	μA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =2mA	200	-	475	
Collector - Emitter Saturation Voltage	V _{CE(SAT)}	I _C =100mA, I _b =5mA	-	-	0.60	V
Transition Frequency	f _T	V _{CE} =5V, I _C =10mA	100	-	-	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V, I _e =0, f=1MHz	-	-	4.5	pF
Noise Figure	NF	V _{ce} =5V, I _c =0.2mA, f=1kHz, R _s =2kΩ	-	-	10	dB

Q₂ ELECTRICAL CHARACTERISTICS (T_a=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut - off Current	I _{CBO}	V _{CB} =30V, I _E =0	-	-	0.1	μA
Emitter Cut - off Current	I _{EBO}	V _{EB} =5V, I _C =0	-	-	0.1	μA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =2mA	200	-	475	
Collector - Emitter Saturation Voltage	V _{CE(SAT)}	I _C =100mA, I _b =5mA	-	-	0.60	V
Transition Frequency	f _T	V _{CE} =5V, I _C =10mA	100	-	-	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V, I _e =0, f=1MHz	-	-	4.5	pF
Noise Figure	NF	V _{ce} =5V, I _c =0.2mA, f=1kHz, R _s =2kΩ	-	-	10	dB



TYPICAL CHARACTERISTICS

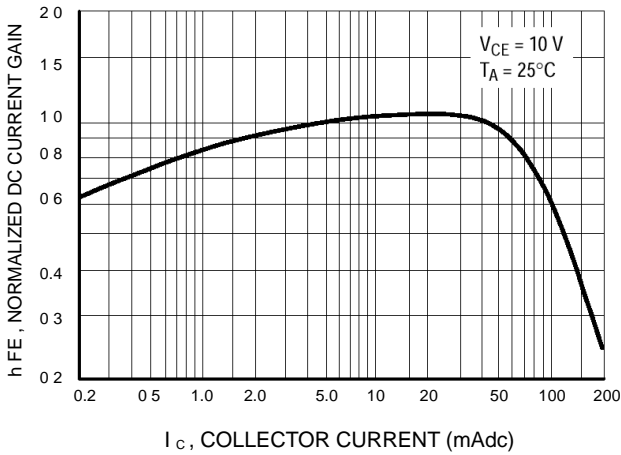


Figure 1. Normalized DC Current Gain

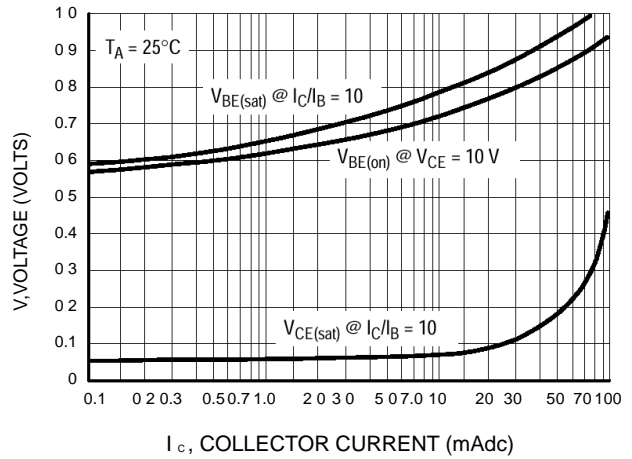


Figure 2. "Saturation" and "On" Voltages

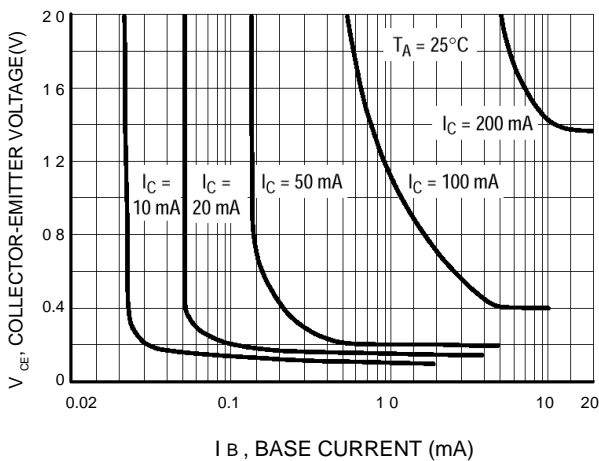


Figure 3. Collector Saturation Region

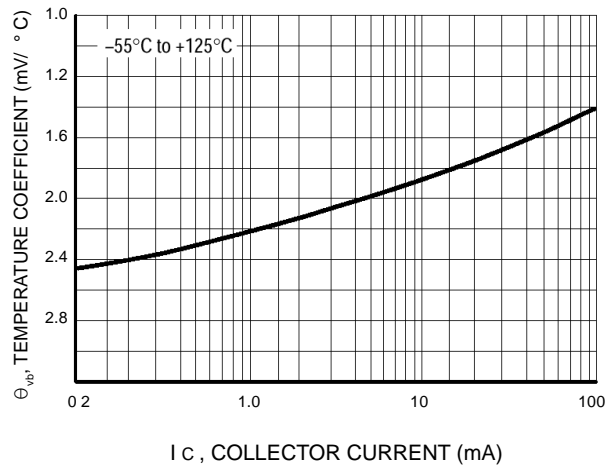


Figure 4. Base-Emitter Temperature Coefficient

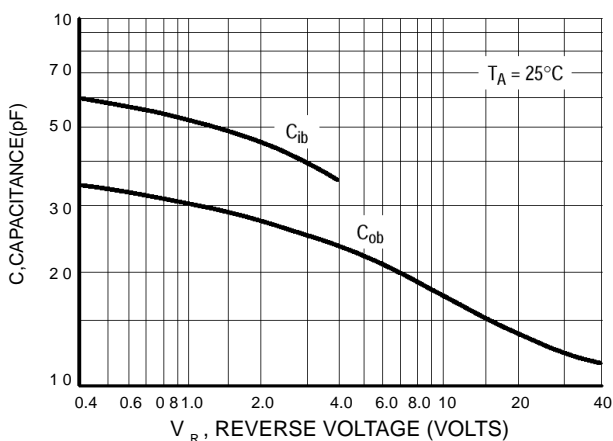


Figure 5. Capacitances

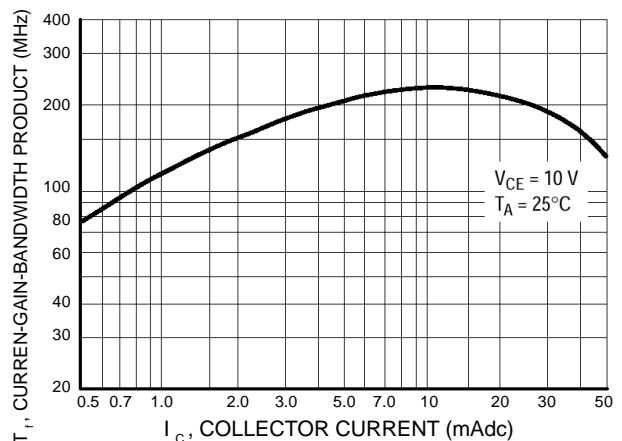


Figure 6. Current-Gain – Bandwidth Product

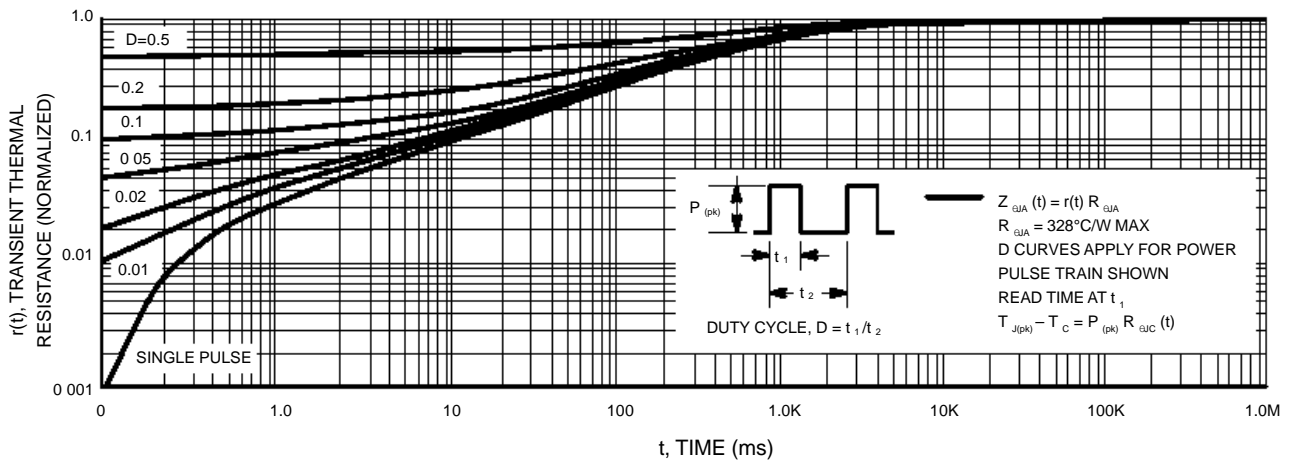


Figure 11. Thermal Response

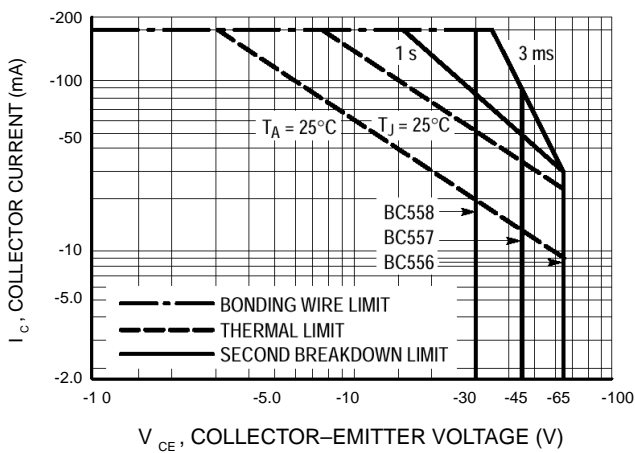


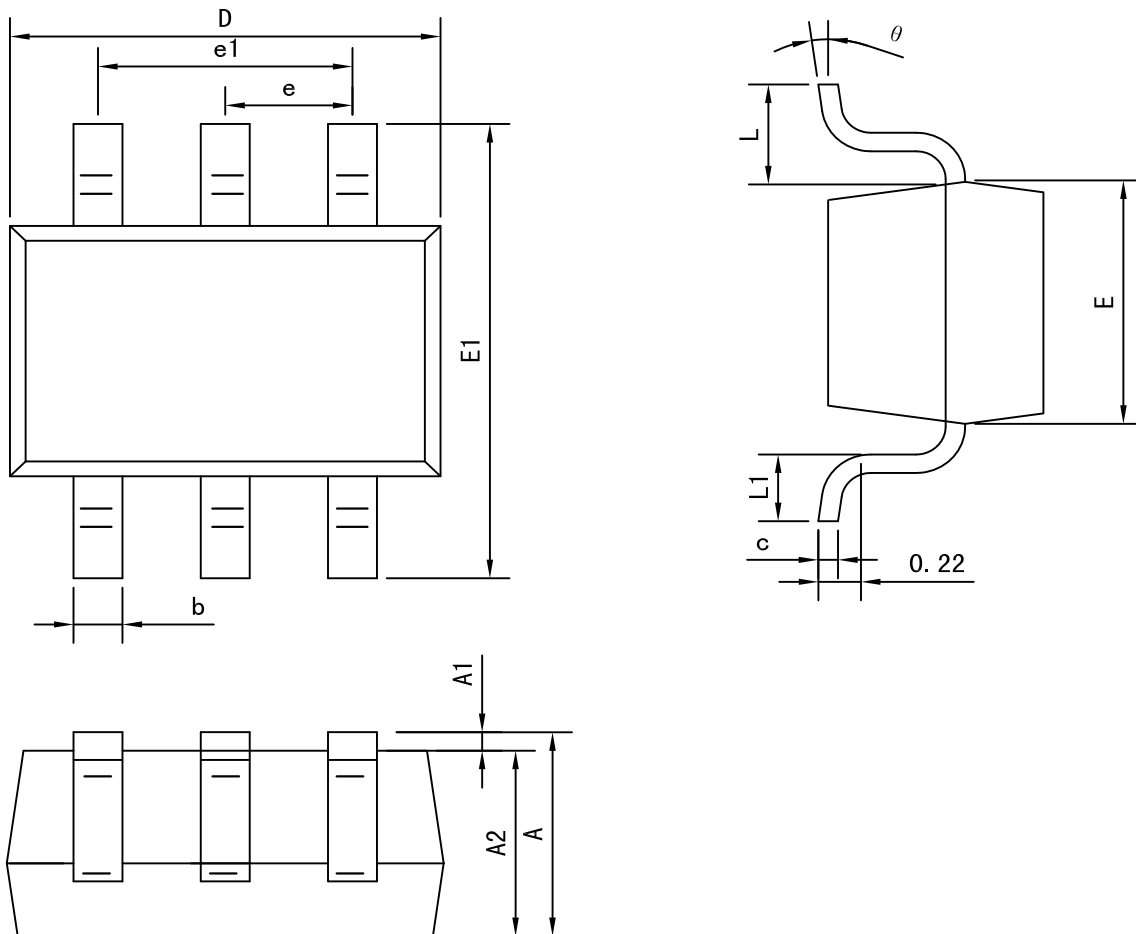
Figure 12. Active Region Safe Operating Area

The safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation. Collector load lines for specific circuits must fall below the limits indicated by the applicable curve.

The data of Figure 12 is based upon $T_{J(pk)} = 150^\circ\text{C}$; T_C or T_A is variable depending upon conditions. Pulse curves are valid for duty cycles to 10% provided $T_{J(pk)} \leq 150^\circ\text{C}$. $T_{J(pk)}$ may be calculated from the data in Figure 12. At high case or ambient temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by the secondary breakdown.



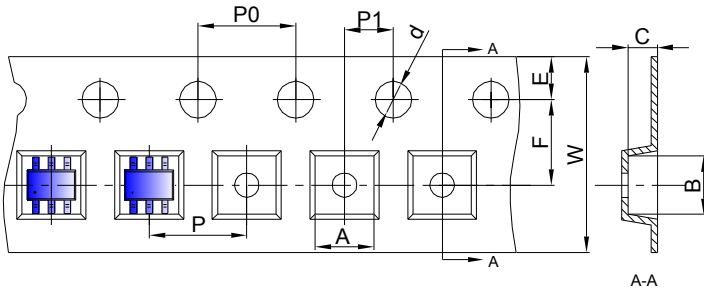
SOT-363 Package outline dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°



SOT-363 Embossed Carrier Tape



Packaging Description:

SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-363 Tape Leader and Trailer

