POWER SUPPLY MONITOR DEVICES

EML22/UML23N

●Features

1) Packaging Zener diode and small-signal amplifier transistor

2) Using outside connection able to use Power supply monitor device

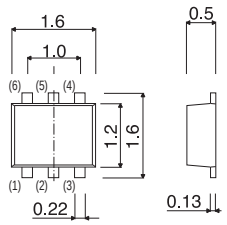
3) When use Power supply monitor device, Temparature drift characteristics of detect voltage is about 150 ppm/ºC.

●Applications

Protection of over load of power supply.

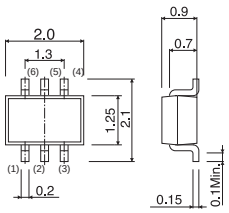
●Dimensions (Unit : mm)

EMT6



MARKING : "L22"(EMT6)

UMT6
(SC-88)
<SOT-363>



MARKING : "L23"(UMT6)

●Packaging specifications and Marking

Type	EML22	UML23N
Package	EMT6	UMT6
Marking	L22	L23
Code	T2R	TR
Basic ordering unit (pieces)	8000	3000

●Absolute maximum ratings (Ta=25°C)

Tr

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	150	mA
Power dissipation	P_D*1	120	mW

Di

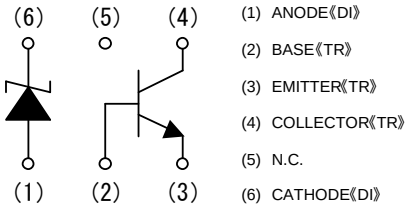
Parameter	Symbol	Limits	Unit
Power dissipation	P_D*1	120	mW

Tr and Di

Parameter	Symbol	Limits	Unit
Power dissipation	P_D*1	150	mW
Junction temperature	Tj	150	°C
Range of storage temperature	Tstg	−55 to +150	°C

*1 Mounted on reference land.

●Internal circuit



●**Electrical characteristics** (Ta = 25°C)

Tr

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter brekdown voltage	BV_{CEO}	50	—	—	V	I_C=1mA
Collector-base breakdown voltage	BV_{CBO}	60	—	—	V	I_C=50μA
Emitter-base breakdown voltage	BV_{EBO}	7	—	—	V	I_E=50μA
Collector cut-off current	I_{CBO}	—	—	100	nA	V_{CB}=60V
Emitter cut-off current	I_{EBO}	—	—	100	nA	V_{EB}=7V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	400	mV	I_C/I_B=50mA/5mA
DC current gain	h_{FE}	120	—	390	—	V_{CE}=6V,I_C=1mA
Transition frequency	f_T	—	180	—	MHz	V_{CE}=12V,I_E=−2mA, f=100MHz
Output capacitance	C_{ob}	—	2	—	pF	V_{CB}=12V,I_E=0A, f=1MHz

Di

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Zener voltage	V_Z	6.58	6.80	7.00	V	I_Z=5mA
Reverse current	I_R	—	—	0.5	mA	V_R=3.5V

●Electrical characteristic curves

<Tr>

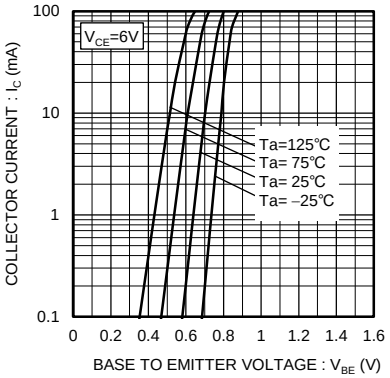


Fig. 1 GROUNDED EMITTER PROPAGATION CHARACTERISTICS

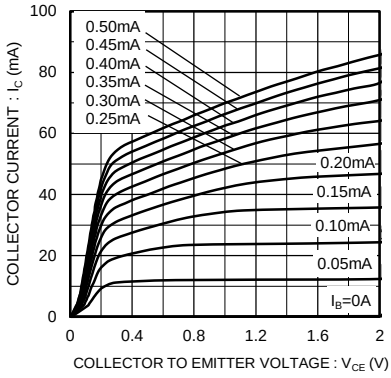


Fig. 2 GROUNDED EMITTER OUTPUT CHARACTERISTICS (Ⅰ)

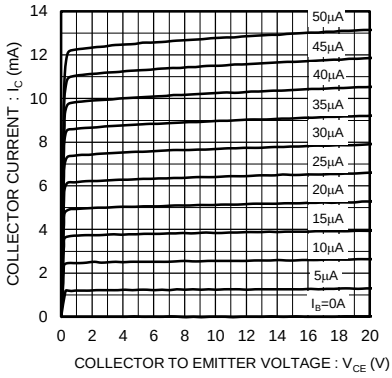


Fig. 3 GROUNDED EMITTER OUTPUT CHARACTERISTICS (Ⅱ)

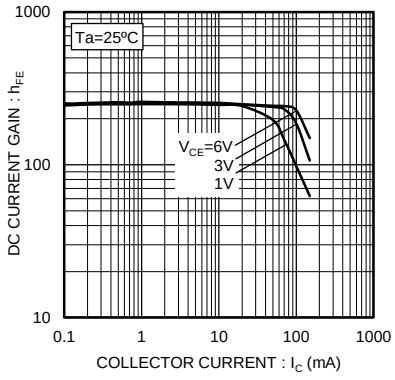


Fig.4 DC CURRENT GAIN vs. COLLECTOR CURRENT CHARACTERISTICS (Ⅰ)

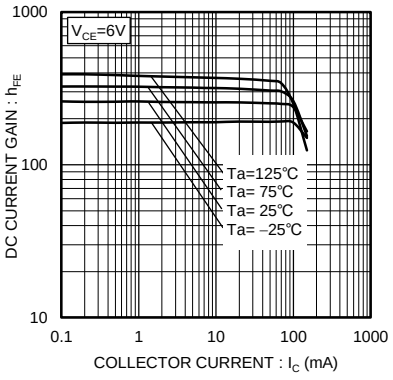


Fig. 5 DC CURRENT GAIN vs. COLLECTOR CURRENT CHARACTERISTICS (Ⅱ)

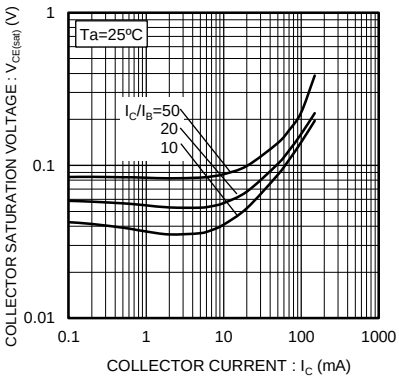


Fig. 6 COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT CHARACTERISTICS(Ⅰ)

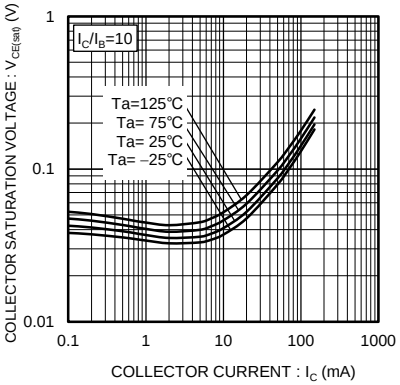


Fig. 7 COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT CHARACTERISTICS(Ⅱ)

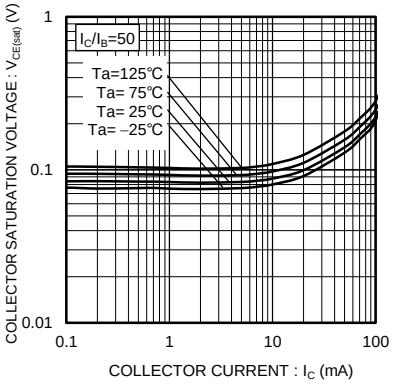


Fig. 8 COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT CHARACTERISTICS(Ⅲ)

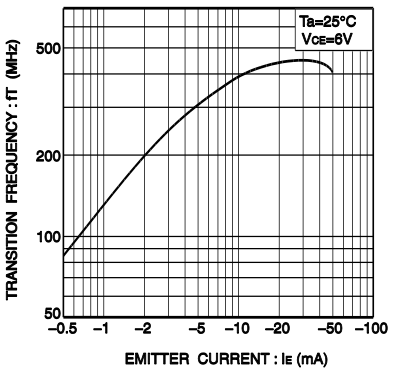


Fig.9 Gain bandwidth product vs. emitter current

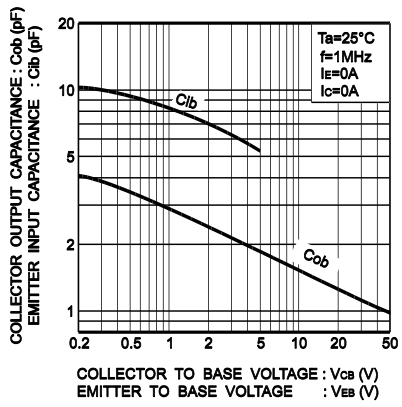


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

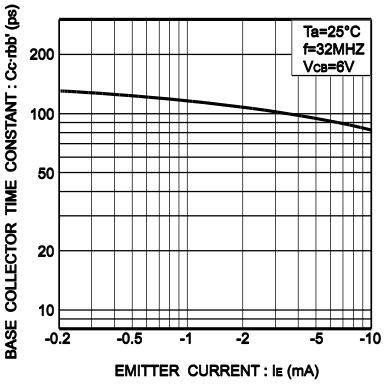
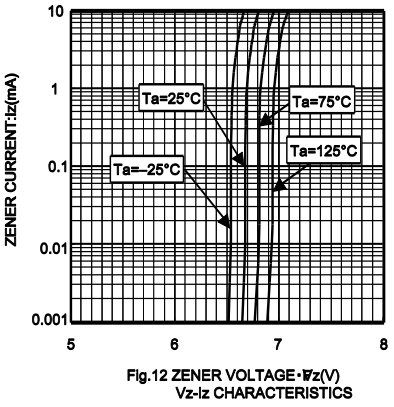
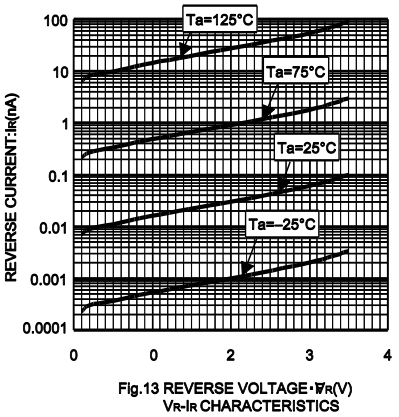
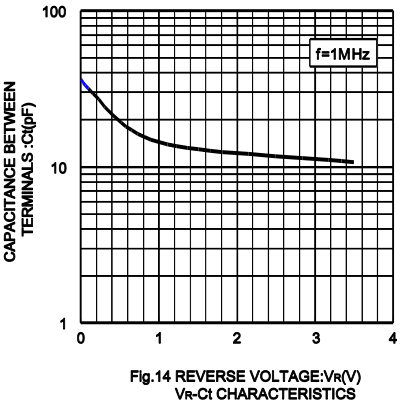


Fig.11 Base-collector time constant vs. emitter current

<Di>







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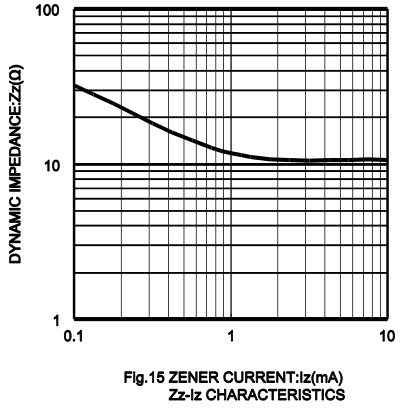

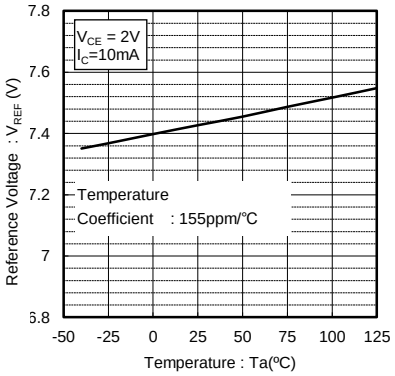

Fig.16 Reference Voltage vs Temperature Characteristics

●Measurement circuits

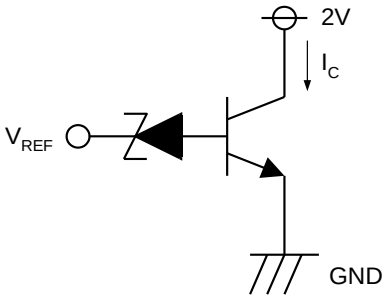

Fig 17 Reference Voltage vs Temperature Characteristics Mesurement CIrcuit

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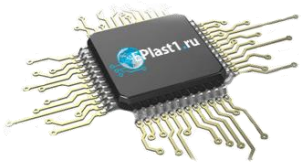

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