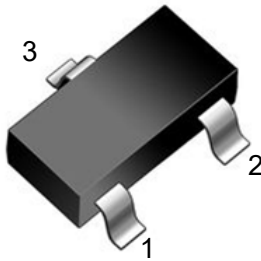
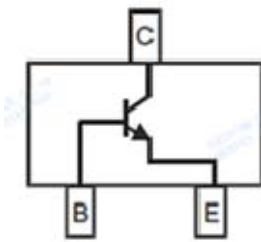


NPN General Purpose Amplifier



SOT-23



Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Low collector-emitter saturation voltage
- High current capabilities
- Part no. with suffix "Q" means AEC-Q101 qualified

Applications

- General purpose switching and muting
- LCD backlighting
- Supply line switching circuits
- Battery driven equipment

Mechanical Data

- **Case:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 9A

■ Maximum Ratings (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Value
Collector-Base Voltage	V _{CB0}	V	40
Collector-Emitter Voltage	V _{CE0}	V	40
Emitter-Base Voltage	V _{EBO}	V	6
Collector Current -Continuous	I _C	A	1
Total Device Dissipation	P _C	mW	300
Thermal Resistance Junction to Ambient	R _{thJA}	°C/W	417
Junction Temperature	T _j	°C	-55 to +150
Storage Temperature	T _{STG}	°C	-55 to +150

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{CB0}	V	I _C =10uA, I _E =0	40		
Collector-emitter breakdown voltage	V _{CE0}	V	I _C =1mA, I _B =0	40		
Emitter-base breakdown voltage	V _{EBO}	V	I _E =10uA, I _C =0	6		
Collector-base cut-off current	I _{CB0}	nA	V _{CB} =40V, I _E =0			100
Collector-emitter cut-off current	I _{CE0}	nA	V _{CE} =30V, I _B =0			100



Emitter-base cut-off current	I_{EBO}	nA	$V_{EB}=5V, I_C=0$			100
DC current gain	h_{FE}		$V_{CE}=5V, I_C=1mA$	300		
	h_{FE}		$V_{CE}=5V, I_C=500mA$	300		900
	h_{FE}		$V_{CE}=5V, I_C=1A$	200		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=100mA, I_B=1mA$			0.2
	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$			0.3
	$V_{CE(sat)}$	V	$I_C=1A, I_B=100mA$			0.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=1A, I_B=100mA$			1.2
Base-emitter voltage	V_{BE}	V	$V_{CE}=5V, I_C=1A$			1.1
Collector-base output capacitance	C_{ob}	pF	$V_{CB}=10V, f=1MHz, V_{sig}=50mV_{p-p}$			10

Other Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Transition frequency	f_T	MHz	$V_{CE}=10V, I_C=50mA, f=100MHz$	150		

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PMMT491AQ	F2	Approximate 0.010	3000	30000	120000	7" reel

Characteristics (Typical)

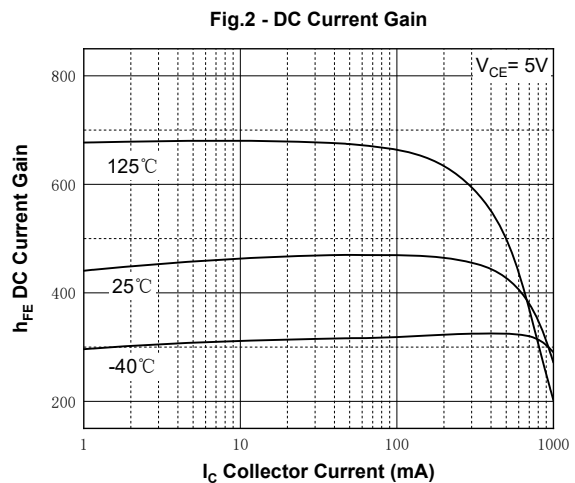
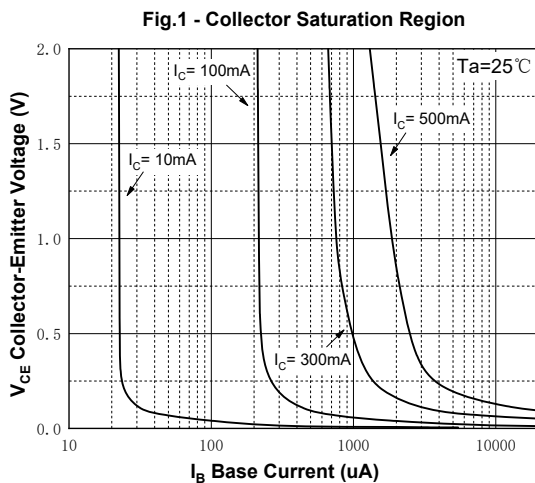




Fig.3 - Collector-Emitter Saturation Voltage vs. Collector Current

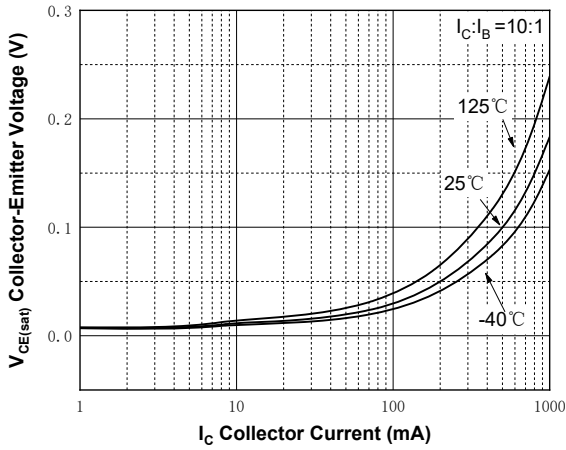


Fig.4 - Collector-Emitter Saturation Voltage vs. Collector Current

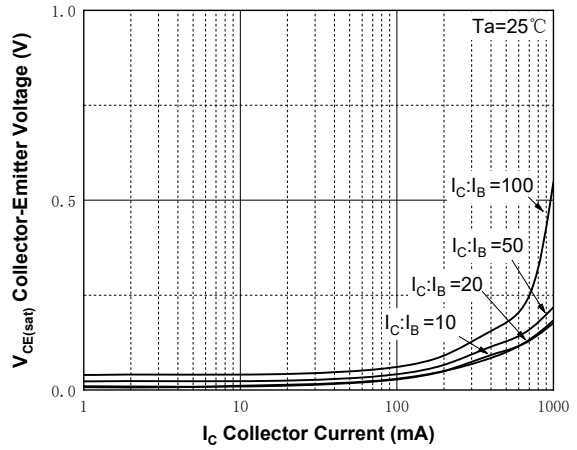


Fig.5 - Base-Emitter Saturation Voltage vs. Collector Current

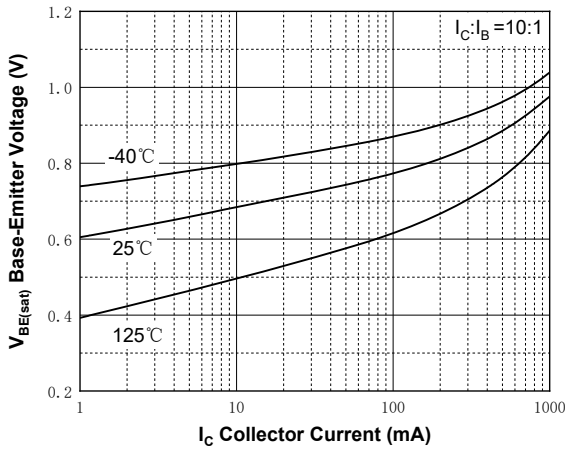


Fig.6 - Base-Emitter Turn-on Voltage vs. Collector Current

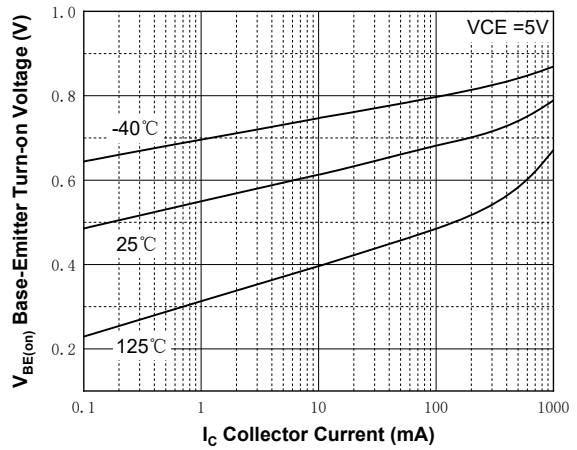
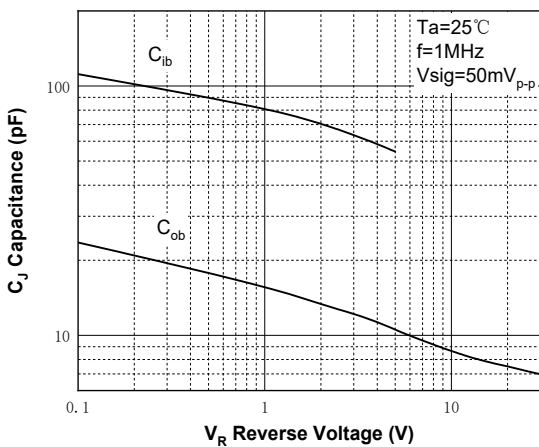
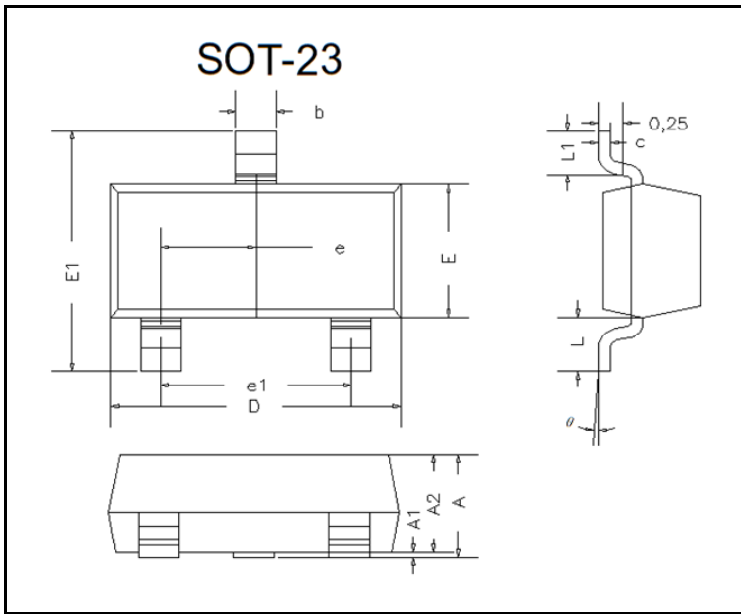


Fig.7 - Capacitance

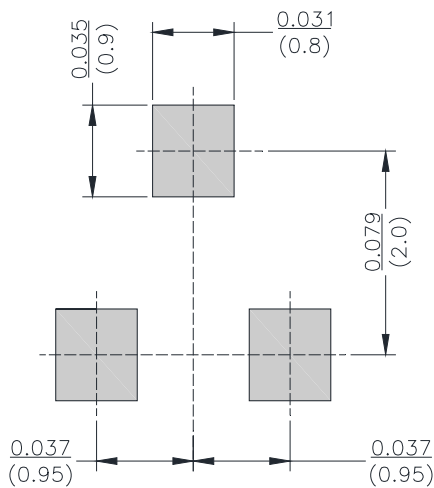


■ Outline Dimensions



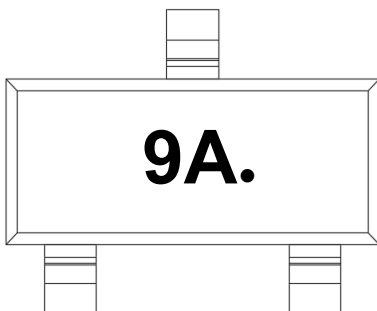
DIM	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.90	1.15
A1	0.000	0.004	0.00	0.10
A2	0.035	0.041	0.90	1.05
b	0.012	0.020	0.30	0.50
c	0.004	0.008	0.10	0.20
D	0.110	0.118	2.80	3.00
E	0.047	0.055	1.20	1.40
E1	0.089	0.100	2.25	2.55
e	0.370TYP.		0.95TYP.	
e1	0.071	0.079	1.80	2.00
L	0.220REF.		0.55REF.	
L1	0.012	0.020	0.30	0.50
θ	0°	8°	0°	8°

■ Soldering Footprint



Unit: $\frac{\text{inch}}{\text{mm}}$

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. 9A is Marking Code
4. Body color: Black



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