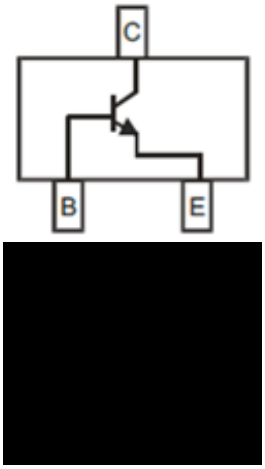
NPN General Purpose Amplifier



SOT-23

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- High Conductance
- Part no. with suffix “Q” means AEC-Q101 qualified

Applications

- Switching and linear amplification

Mechanical Data

- **Case**: SOT-23
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 2X

■ Maximum Ratings (Ta=25 unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	60
Collector-Emitter Voltage	V_{CEO}	V	40
Emitter-Base Voltage	V_{EBO}	V	6
Collector Current -Continuous	I_C	mA	600
Total Device Dissipation (*)	P_D	mW	300
Thermal Resistance From Junction To Ambient (*)	$R_{\theta JA}$	/W	417
Junction Temperature	T_j		-55 to +150
Storage Temperature	T_{STG}		-55 to +150

(*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch.

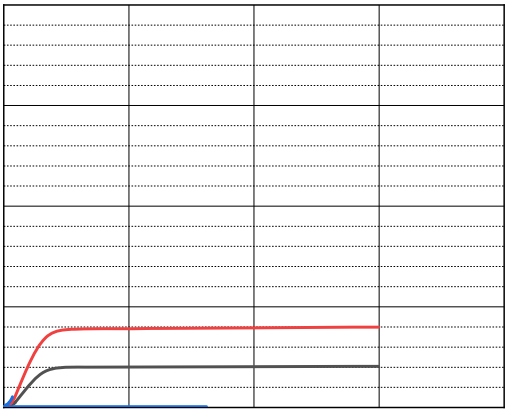
■ Electrical Characteristics (Ta=25 unless otherwise noted)

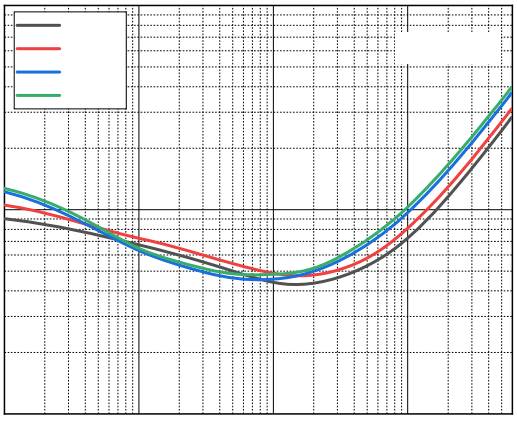
Item	Symbol	Unit	Conditions	Min	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C=10mA,I_E=0	60	-
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C =1mA,I_B=0	40	-
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=100μA,I_C=0	6	-
Collector cut-off current	I_{CEO}	nA	V_{CE}=35V, I_B=0	-	100
Base cut-off current	I_{CBO}	nA	V_{CB}=60V, I_E =0	-	100
Emitter cut-off current	I_{EBO}	nA	V_{EB}=3 V, I_C =0	-	100
DC current gain	h_{FE}		V_{CE}=1V,I_C=150mA	100	300
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C=150mA,I_B=15mA	-	0.4
Base-emitter saturation voltage	$V_{BE(sat)}$	V	I_C=150mA,I_B=15mA	-	0.95
Transition frequency	f_T	MHz	V_{CE}=10V,I_C=20mA,f=100MHz	250	-
Delay time	td	ns	V_{CC}=30V, $V_{BE(off)}$=0.2V I_C=150mA,I_{B1}=15mA	-	15
Rise time	tr	ns		-	20
Storage time	ts	ns	V_{CC}=30V,I_C=150mA,I_{B1}=I_{B2}=15mA	-	225
Fall time	tf	ns		-	30

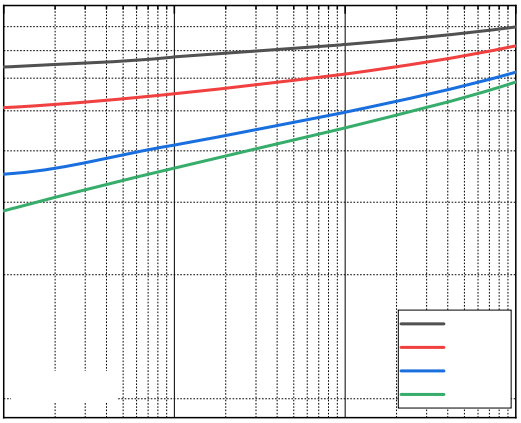
■ Ordering Information (Example)

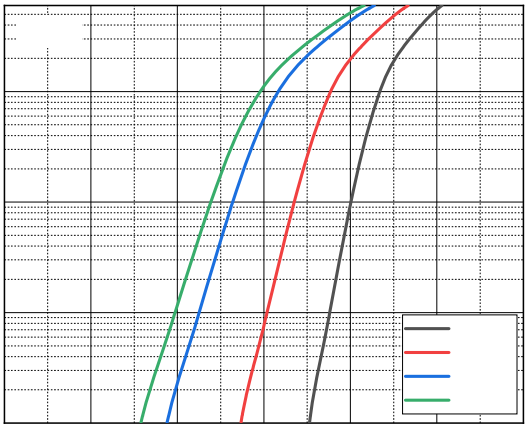
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMBT4401Q	F2	Approximate 0.01	3000	30000	120000	7” reel

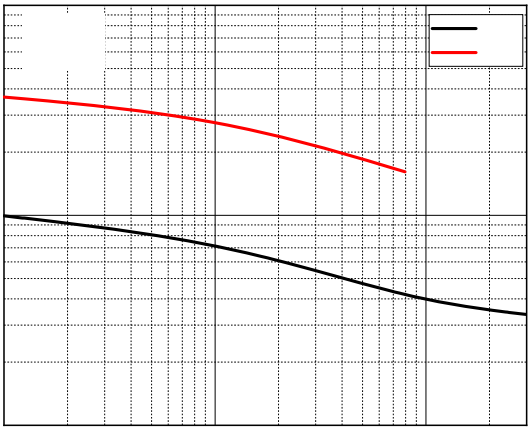
■ Characteristics (Typical)

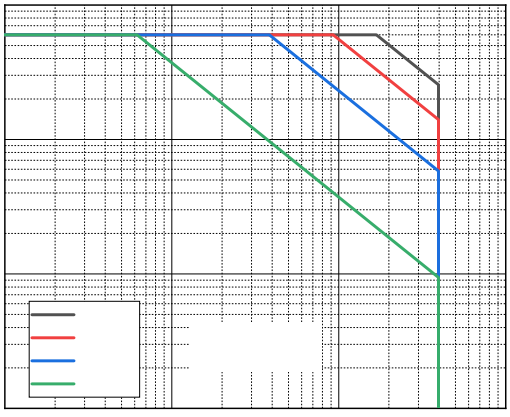


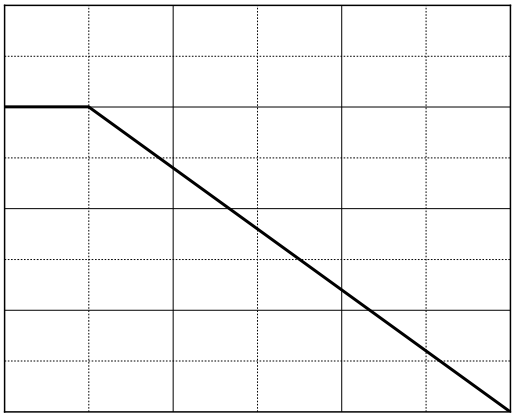




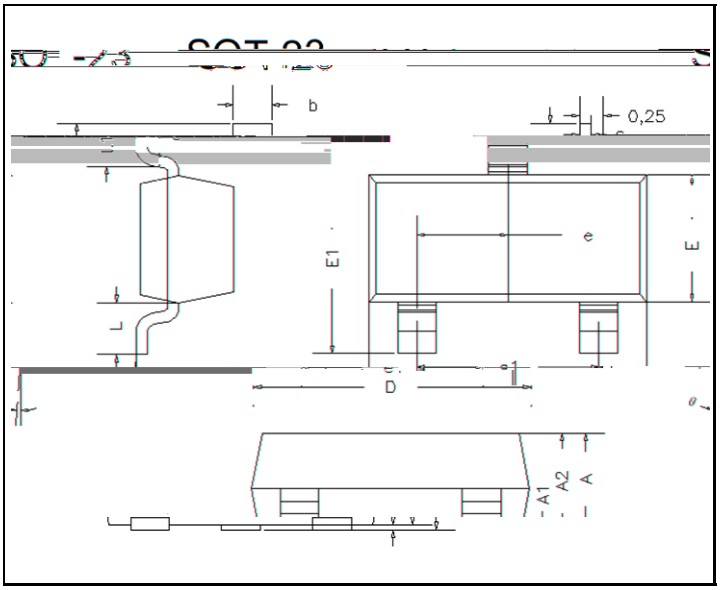






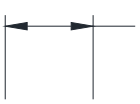


■SOT-23 Package Outline Dimensions



DIM	INCHES		MM		NOTE
	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°	

■ SOT-23 Suggested Pad Layout



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Disclaimer

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