

## NPN General Purpose Amplifier

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### Features

- z Moisture sensitivity level 1<sup>0</sup>3
- z Halogen free and RoHS compliant
- z Surface mount package ideally suited for automatic insertion<sup>0</sup>3

### Application

- z Signal amplification
- z Switching circuit

### Mechanical data

- z **Package!** SOT-23<sup>0</sup>3
- z **Terminals!** Tin plated leads, solderable per<sup>0</sup>3 J-STD-002 and JESD22-B102<sup>0</sup>3

### Maximum Ratings (T<sub>a</sub>=25qà Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				2X
Collector-base voltage	V <sub>CB0</sub>	V	I <sub>C</sub> =10mA, I <sub>E</sub> =0	60
Collector-emitter voltage	V <sub>CE0</sub>	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0	40
Emitter-base voltage	V <sub>EB0</sub>	V	I <sub>E</sub> =100µA, I <sub>C</sub> =0	6
Collector current	I <sub>C</sub>	mA		600
Power dissipation	P <sub>D</sub>	mW		300
Junction temperature	T <sub>J</sub>	-		-55 to +150
Storage temperature	T <sub>STG</sub>	-		-55 to +150

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Item	Symbol	Unit	Conditions	Min	Typ	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	$I_E=100\mu A, I_C=0$	6		
Collector-base cut-off current	$I_{CBO}$	nA	$V_{CB}=60V$			100
Collector-emitter cut-off current	$I_{CEO}$	nA	$V_{CE}=35V$			100
Emitter-base cut-off current	$I_{EBO}$	nA	$V_{EB}=3V$			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	$t_d$	ns	$V_{CC}=30V, I_C=150mA, V_{BE}=0.2V, I_{B1}=15mA$			15
Rise time	$t_r$	ns				20
Storage time	$t_s$	ns	$V_{CC}=30V, I_C=150mA, I_{B1}=-I_{B2}=15mA$			225
Fall time	$t_f$	ns				60

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Parameter	Symbol	Unit	Thermal Resistance $\theta_{JA}$ Junction-to-ambient
	(1)	- /W	417
Thermal resistance, junction-to-case	$R_{J-C}^{(1)}$	- /W	334

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Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
MMBT4401	F2	Approximate 0.008	3000	30000	120000	7" reel



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## Disclaimer