

NPN Transistor

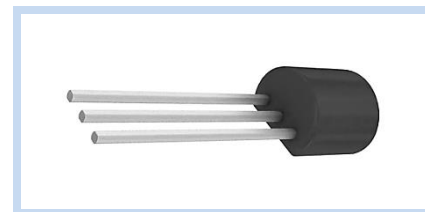
40V 600mA 625mW TO-92

2N4401

MERITEK

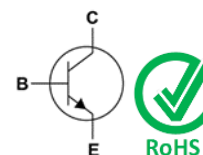
FEATURE

- Collector-emitter Voltage $V_{CE}=40V$
- Collector Current: 600mA
- Application: Signal Processing, Switching, Amplification



MECHANICAL DATA

- Case: TO-92, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026



MAXIMUM RATING

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_{tot}	625	mW
Junction Temperature and Storage Temperature Range	T_J, T_{stg}	-55 ~+150	°C

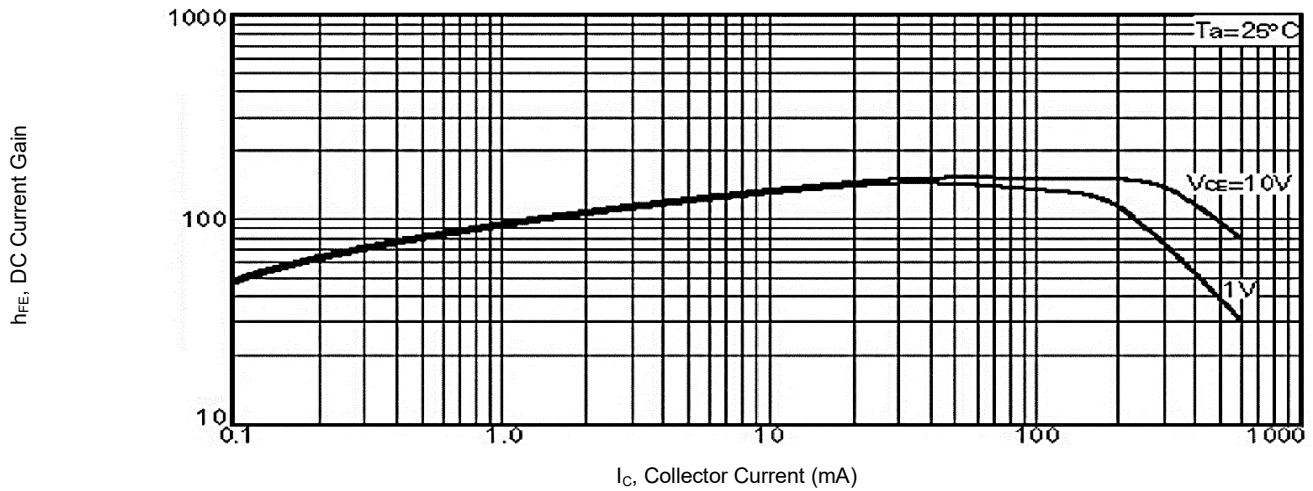
ELECTRICAL CHARACTERISTICS

Parameter- ON Characteristic	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$V_{CE}=1.0V, I_C=0.1mA$	h_{FE}	20	-	-
	$V_{CE}=1.0V, I_C=1.0mA$		40	-	
	$V_{CE}=1.0V, I_C=10mA$		58	-	
	$V_{CE}=1.0V, I_C=150mA$		100	300	
	$V_{CE}=2.0V, I_C=500mA$		40	-	
Collector-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$	$V_{CE(SAT)}$	-	0.40	V
	$I_C=500mA, I_B=50mA$		-	0.75	
Base-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$	$V_{BE(SAT)}$	0.75	0.95	V
	$I_C=500mA, I_B=50mA$		-	1.20	
Collector-Base Breakdown Voltage	$I_C=100\mu A$	$V_{(BR)CBO}$	60	-	V
Collector-Emitter Breakdown Voltage	$I_C=1.0mA$	$V_{(BR)CEO}$	40	-	V
Emitter-Base Breakdown Voltage	$I_E=100\mu A$	$V_{(BR)EBO}$	6.0	-	V
Collector Base Cutoff Current	$V_{CB}=35V$	I_{CBO}	-	100	nA
Emitter Base Cutoff Current	$V_{EB}=5V$	I_{EBO}	-	100	nA
Collector-Base Capacitance	$V_{CB}=5.0V, f=100MHz$	C_{OB}	-	12	pF
Turn On Time	$V_{CC}=30V, I_C=150mA, I_{B1}=15mA, V_{BE}=2V$	t_{on}	-	35	nS
Turn Off Time	$V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA$	t_{off}	-	255	nS
Current-Gain – Bandwidth Product	$I_C=20mA, V_{CE}=10V, f=100MHz$	f_T	250	-	MHz

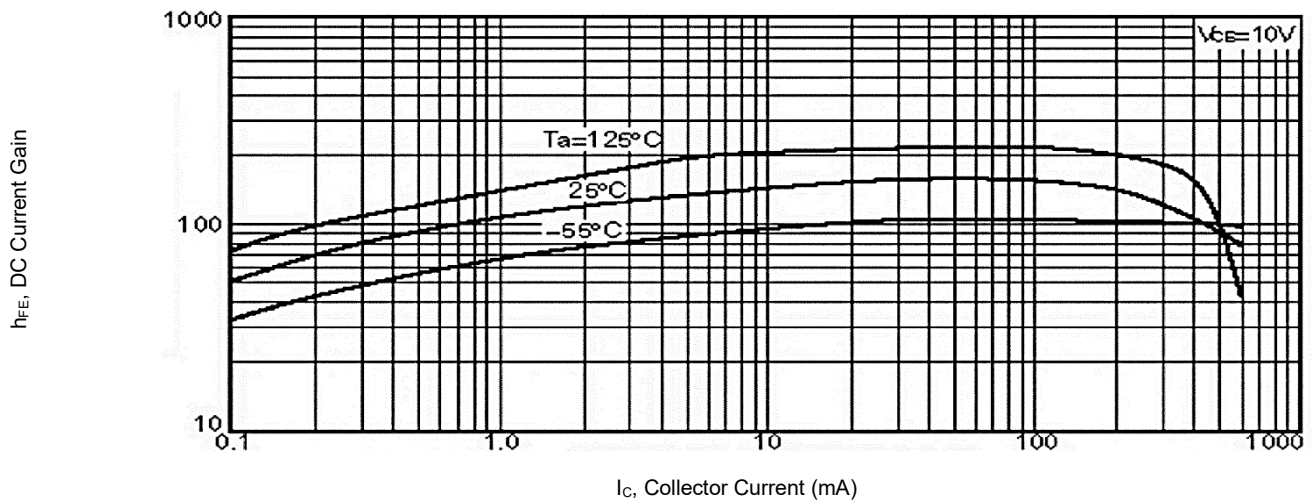
Note: $T_A=25^\circ C$ unless otherwise noted.

CHARACTERISTIC CURVES

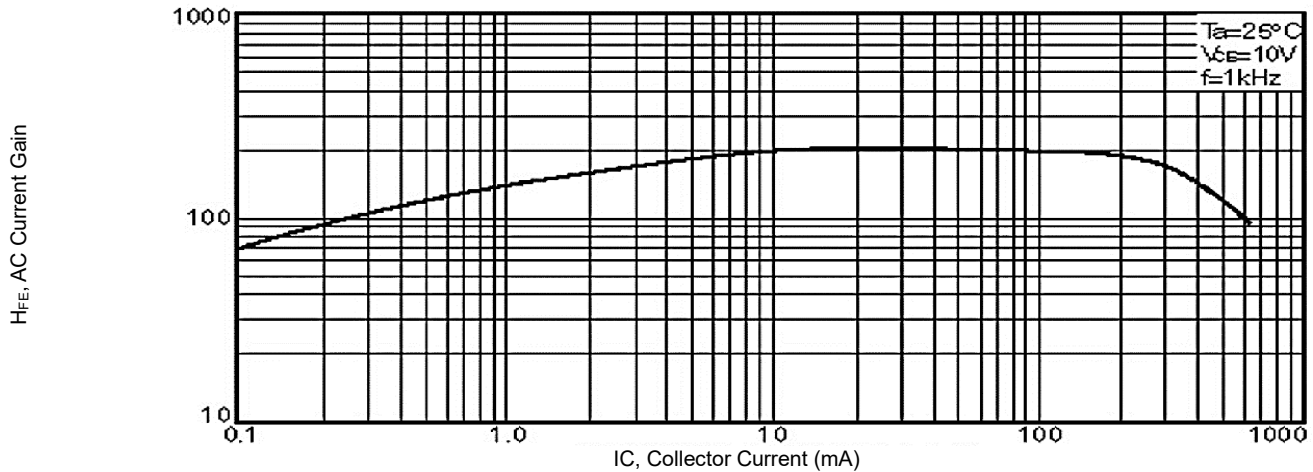
DC Current Gain vs Collector Current



DC Current Gain vs Collector Current

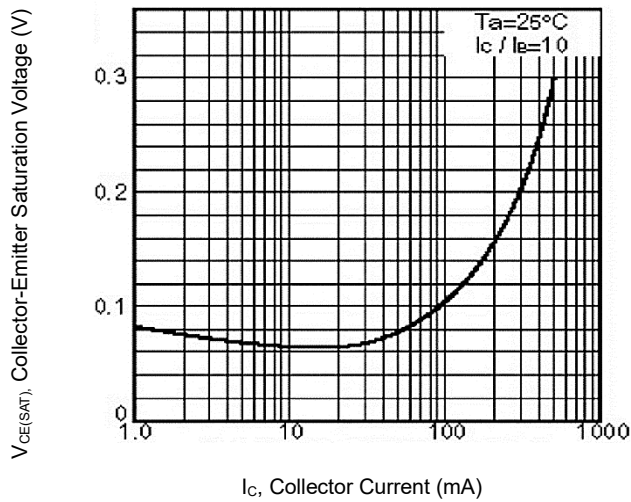


AC Current Gain vs Collector Current

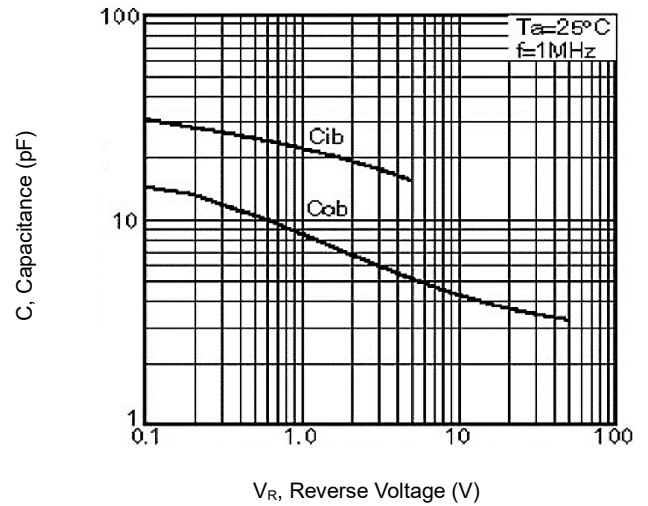


CHARACTERISTIC CURVES

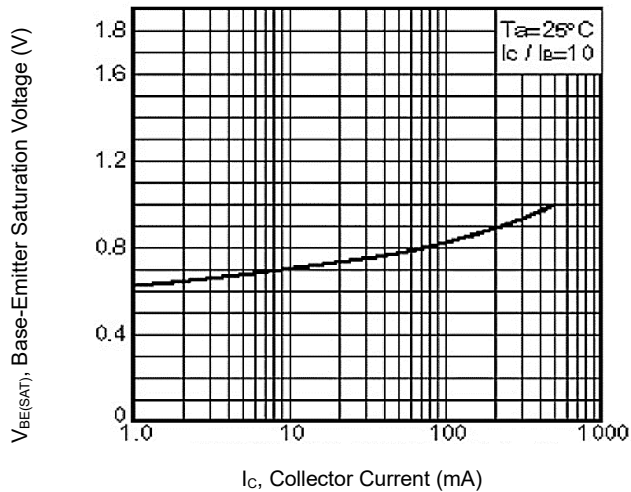
$V_{CE(SAT)}$ Voltage vs Collector Current



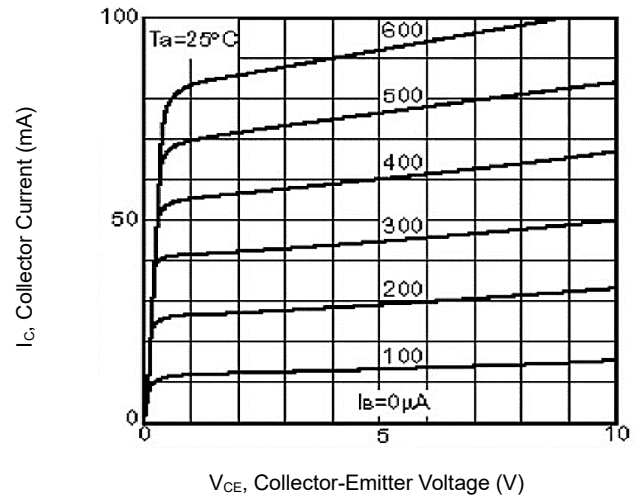
Input /Output Capacitance vs Voltage



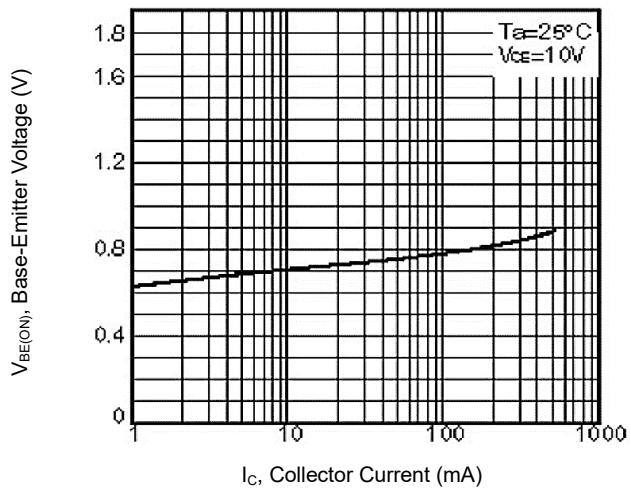
$V_{BE(SAT)}$ Voltage vs Collector Current



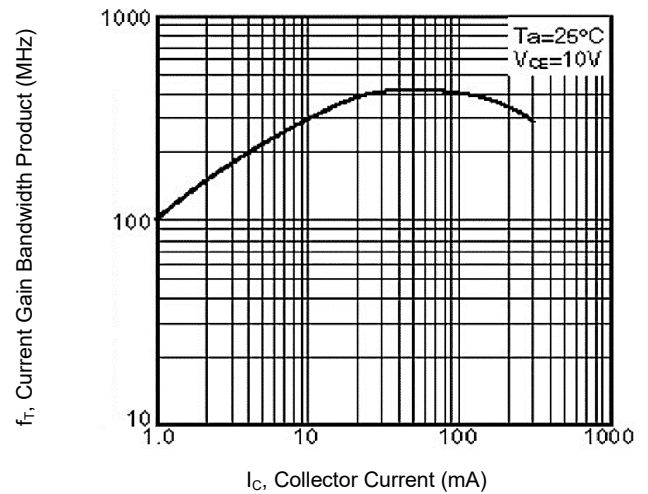
Static Characteristic



Grounded Emitter Propagation Characteristics

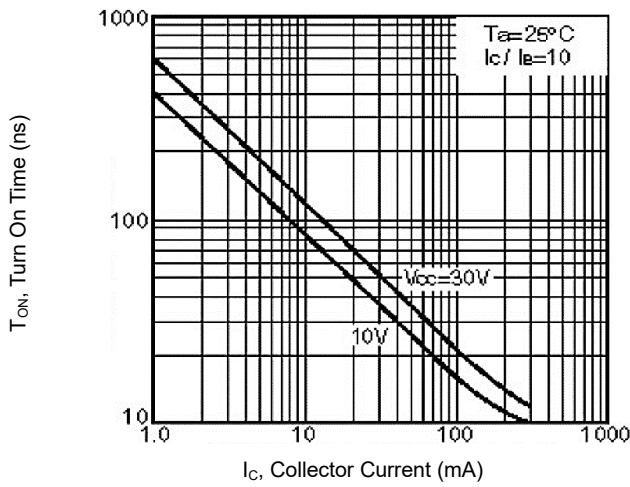


Current Gain Bandwidth Product

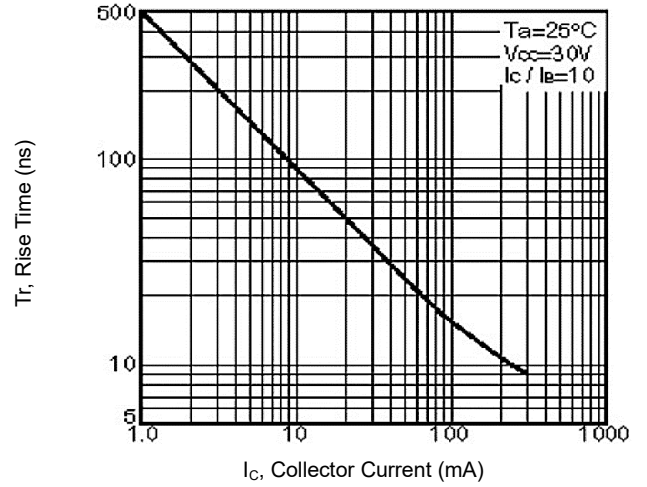


CHARACTERISTIC CURVES

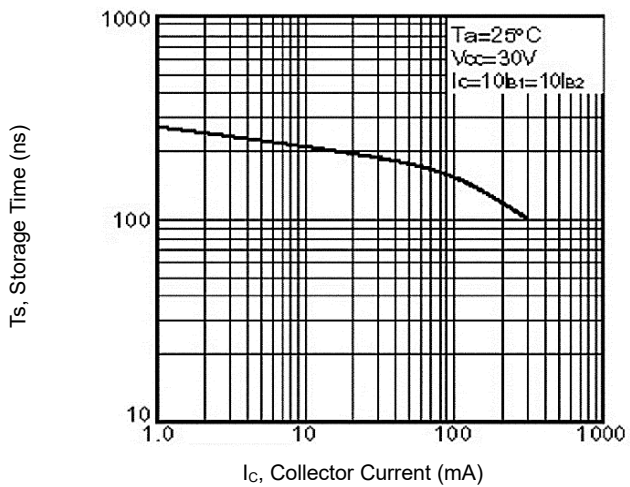
Turn On Time vs Collector Current



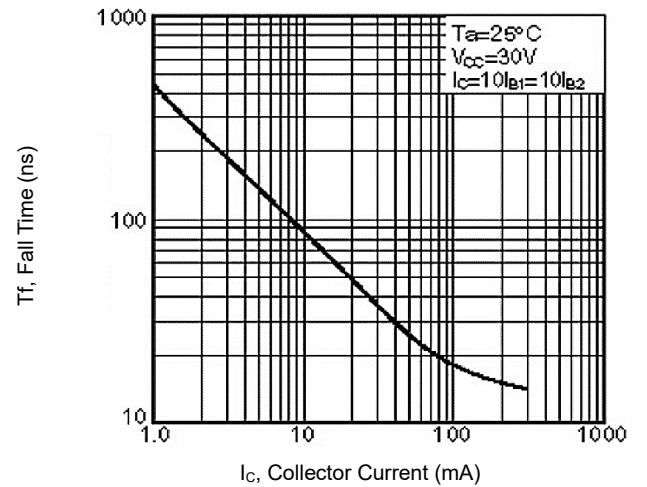
Rise Time vs Collector Current



Storage Time vs Collector Current



Fall Time vs Collector Current



NPN Transistor

40V 600mA 625mW TO-92

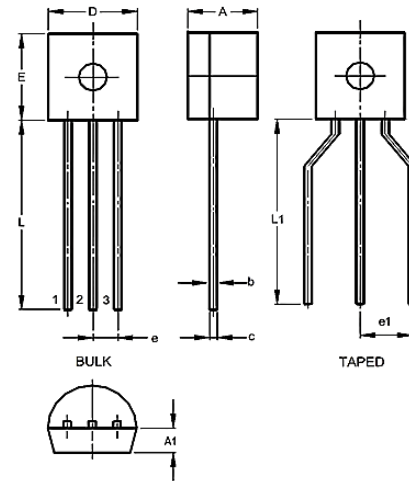
2N4401

MERITEK

DIMENSIONS

TO-92	Min	Max
A	3.50	3.70
A1	1.00	1.20
b	0.35	0.45
c	0.29	0.39
D	4.50	4.70
e	1.17	1.37
E	4.50	4.70
L	12.5	--
L1	12.0	--

All Dimensions in mm



ORDERING INFORMATION

Part NO.	Package	Packing Code	Type	Packing
2N4401	TO-92	Blank	Straight Lead	Bulk
2N4401-TA	TO-92	TA	Bent Lead	Tape & Reel Ammo