



■ ABSOLUTE MAXIMUM RATING ( $T_a=25$  )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	200	mA
Collector Dissipation	$P_C$	625	mW
Junction Temperature	$T_J$	150	
Operating and Storage Temperature	$T_{STG}$	-55 ~ +150	

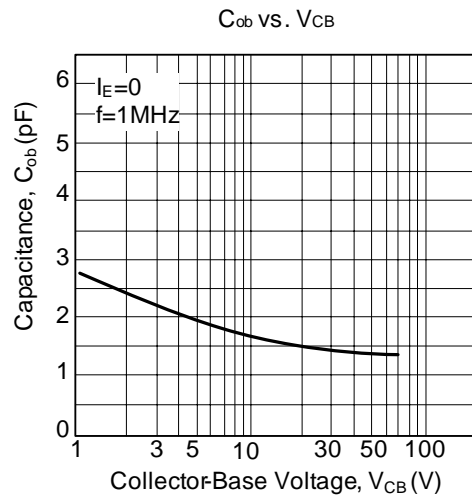
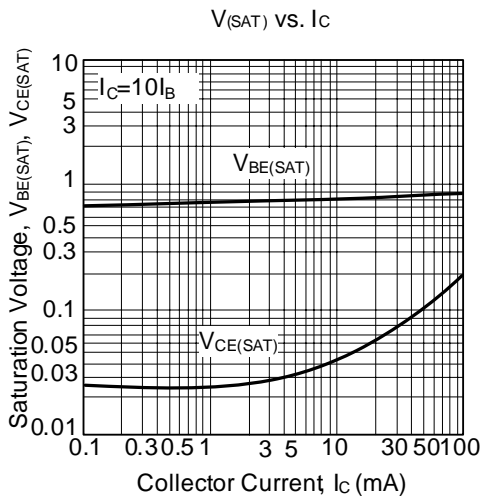
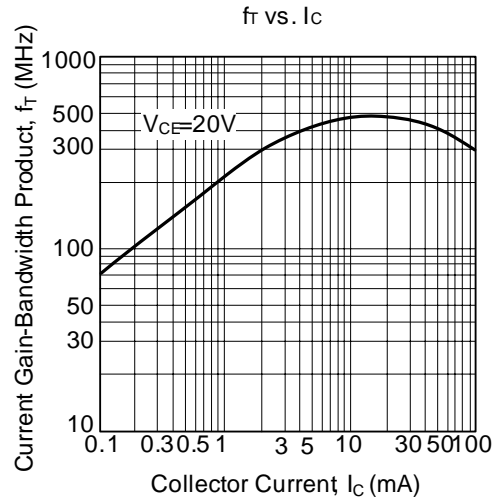
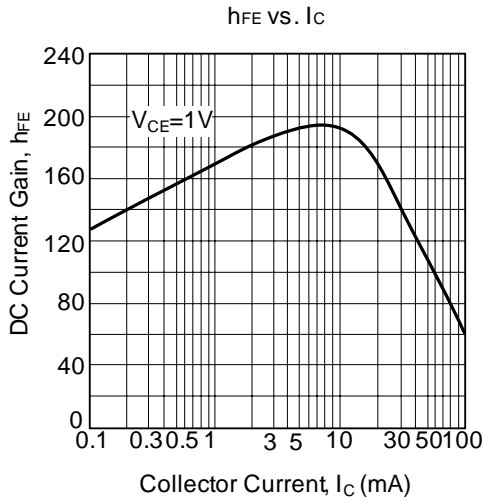
Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_a=25$  , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-Emitter Breakdown Voltage (note)	$BV_{CEO}$	$I_C=1mA, I_B=0$	40			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector-Emitter Saturation Voltage (note)	$V_{CE(SAT)1}$	$I_C=10mA, I_B=1mA$			0.2	V
	$V_{CE(SAT)2}$	$I_C=50mA, I_B=5mA$			0.3	
Base-Emitter Saturation Voltage (note)	$V_{BE(SAT)1}$	$I_C=10mA, I_B=1mA$	0.65		0.85	V
	$V_{BE(SAT)2}$	$I_C=50mA, I_B=5mA$			0.95	
Collector Cut-off Current	$I_{CBO}$	$V_{CE}=30V, V_{EB}=3V$			50	nA
Base Cut-off Current	$I_{BL}$	$V_{CE}=30V, V_{EB}=3V$			50	nA
DC Current Gain (note)	$h_{FE1}$	$V_{CE}=1V, I_C=0.1mA$	40			
	$h_{FE2}$	$V_{CE}=1V, I_C=1mA$	70			
	$h_{FE3}$	$V_{CE}=1V, I_C=10mA$	100		300	
	$h_{FE4}$	$V_{CE}=1V, I_C=50mA$	60			
	$h_{FE5}$	$V_{CE}=1V, I_C=100mA$	30			
Current Gain Bandwidth Product	$f_T$	$V_{CE}=20V, I_C=10mA, f=100MHz$	300			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=5V, I_E=0, f=1MHz$			4	pF
Turn on Time	$t_{ON}$	$V_{CC}=3V, V_{BE}=0.5V, I_C=10mA, I_B1=1mA$			70	ns
Turn off Time	$t_{OFF}$	$I_B1=1mA, I_B2=1mA$			250	ns

Note: Pulse test: Pulse Width 300 $\mu$ s, Duty Cycle 2%

■ TYPICAL CHARACTERISTICS



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