



## UP1753

## NPN SILICON TRANSISTOR

### HIGH CURRENT LOW $V_{CE(SAT)}$ TRANSISTOR

#### DESCRIPTION

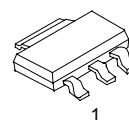
The UTC **UP1753** is specially designed to have high current and low  $V_{CE(SAT)}$  to suit for power amplifier application and power switching application.

#### FEATURES

\* $V_{CE(SAT)}$  typ is below 300mV at 5A

\* Max continuous current 6 A

\*  $BV_{CEO}$  is 100V minimum.



SOT-223

\*Pb-free plating product number: UP1753L

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UP1753-AA3-R	UP1753L-AA3-R	SOT-223	B	C	E	Tape Reel

<p>UP1753L-AA3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AA3: SOT-223</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	200	V
Collector-Emitter Voltage	$V_{CEO}$	100	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Peak Pulse Current	$I_{CM}$	10	A
Continuous Collector Current	$I_C$	6	A
Power Dissipation at $T_a = 25$	$P_D$	3	W
Junction Temperature	$T_J$	+150	
Storage Temperature	$T_{STG}$	-55 ~ +150	

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

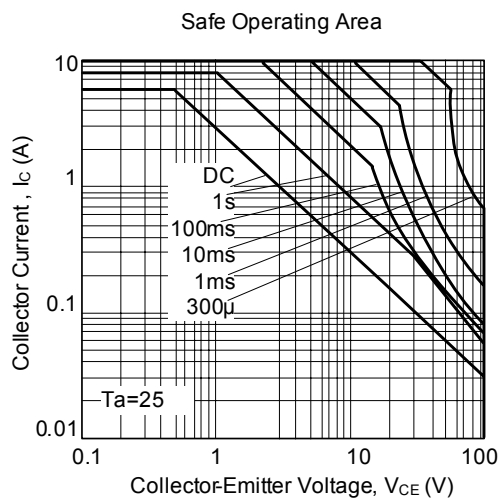
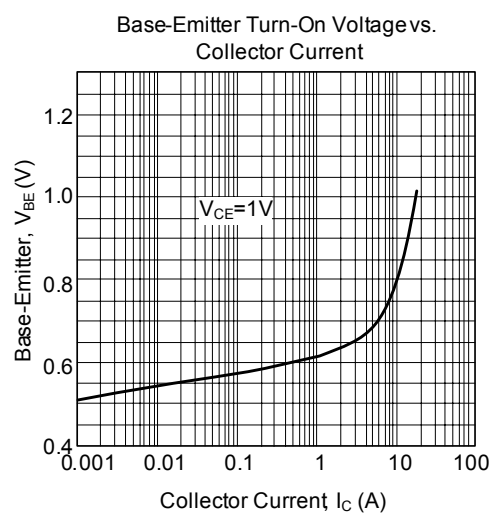
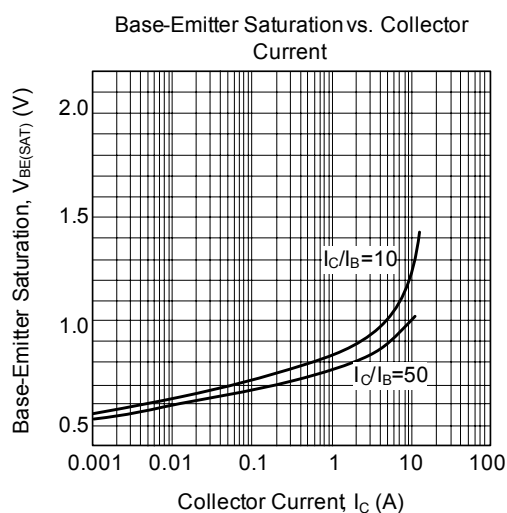
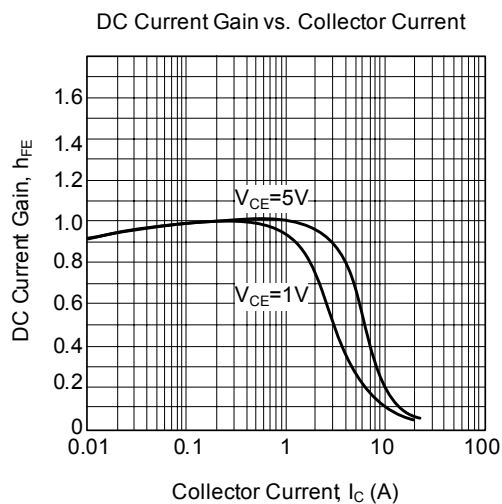
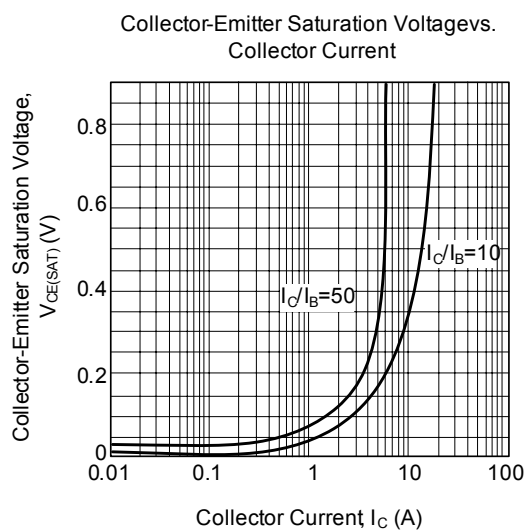
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 100\mu A$	200	300		V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 10mA$ (Note1)	100	120		V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_C = 100\mu A$	6	8		V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB} = 150V, T_a = 25$ $V_{CB} = 150V$ $T_a = 100$			10 1	nA $\mu A$
Collector Cut-Off Current	$I_{CER}$	$R \leq 1K\Omega$ $V_{CB} = 150V, T_a = 25$ $V_{CB} = 150V, T_a = 100$			10 1	nA $\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB} = 6V$			10	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 0.1A, I_B = 5mA$ (Note1) $I_C = 2A, I_B = 100mA$ (Note1) $I_C = 5A, I_B = 500mA$ (Note1)			50 150 330	mV mV mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 5A, I_B = 500mA$ (Note1)			1250	mV
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$I_C = 5A, V_{CE} = 2V$ (Note1)			1100	mV
Static Forward Current Transfer Ratio	$h_{FE}$	$I_C = 10mA, V_{CE} = 2V$ $I_C = 2A, V_{CE} = 2V$ (Note1) $I_C = 4A, V_{CE} = 2V$ (Note1) $I_C = 10A, V_{CE} = 2V$ (Note1)	100 100 50 20	200 200 100	300	
Transition Frequency	$f_T$	$I_C = 100mA, V_{CE} = 10V, f = 50MHz$		100		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10V, f = 1MHz$		38		pF
Switching Times	$t_{ON}$	$I_C = 1A, V_{CC} = 10V$		50		ns
	$t_{OFF}$	$I_{B1} = I_{B2} = 100mA$		1600		ns

Note: 1. Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$ ,

■ TYPICAL CHARACTERISTICS



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