



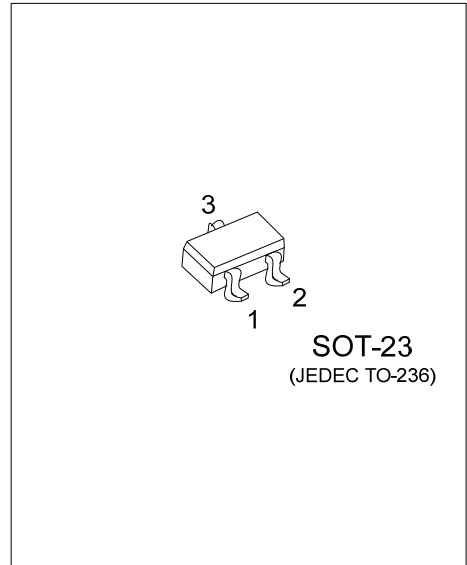
UN1518

NPN SILICON TRANSISTOR

POWER (SWITCHING) TRANSISTOR

■ FEATURES

- * Bipolar Power Transistor
- * High Current Switching
- * High h_{FE}
- * Low $V_{CE(SAT)}$



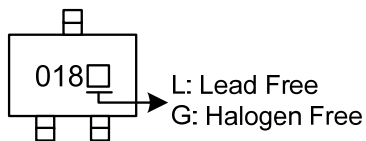
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UN1518L-AE3-R	UN1518G-AE3-R	SOT-23	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>UN1518G-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$, unless otherwise stated)

PARAMETER	SYMBOL	RATINGS	UNIT	
Collector-Base Voltage	V_{CBO}	20	V	
Collector-Emitter Voltage	V_{CEO}	20	V	
Emitter-Base Voltage	V_{EBO}	5	V	
Collector Current	Pulse (Note 2)	I_{CM}	6	A
	DC	I_C	2.5	A
Base Current	I_B	500	mA	
Total Device Dissipation	P_D	625	mW	
Storage Temperature	T_{STG}	-50 ~ +150	$^\circ\text{C}$	

Notes: 1. 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.

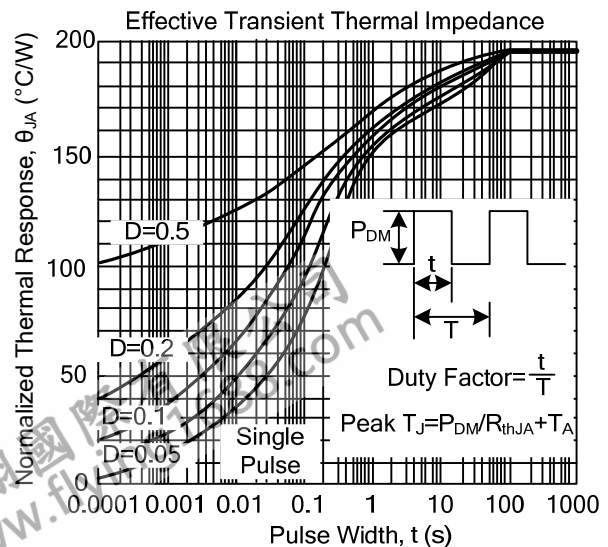
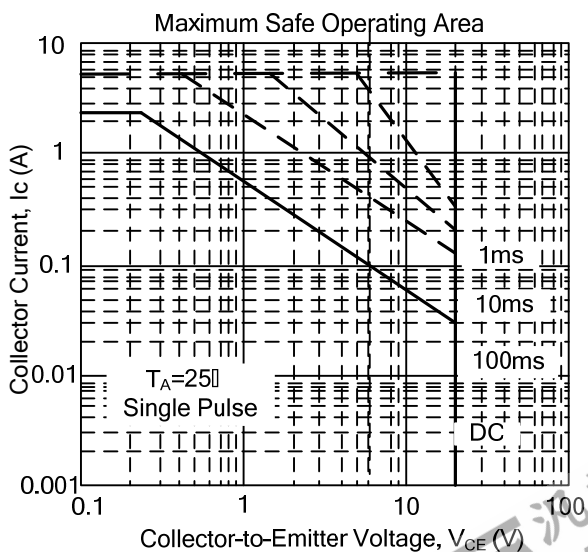
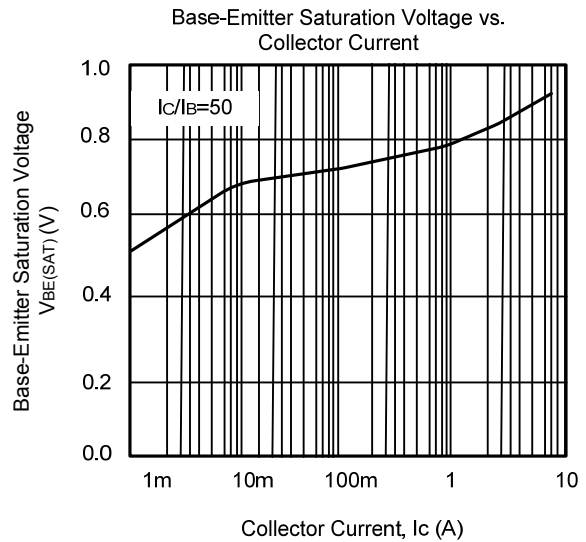
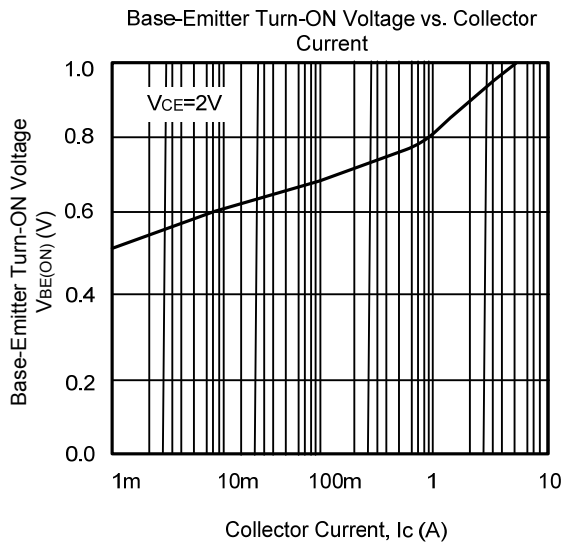
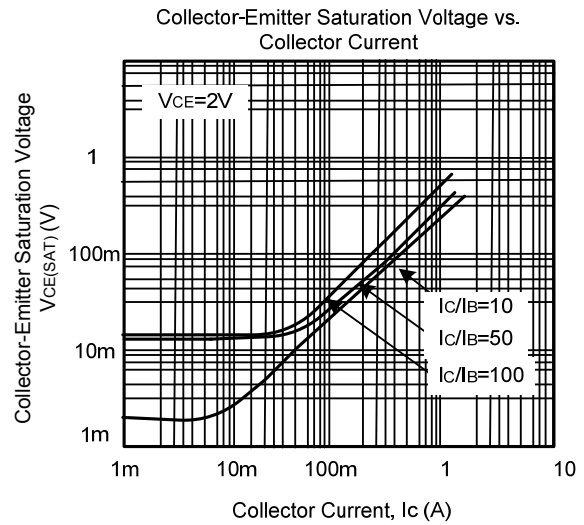
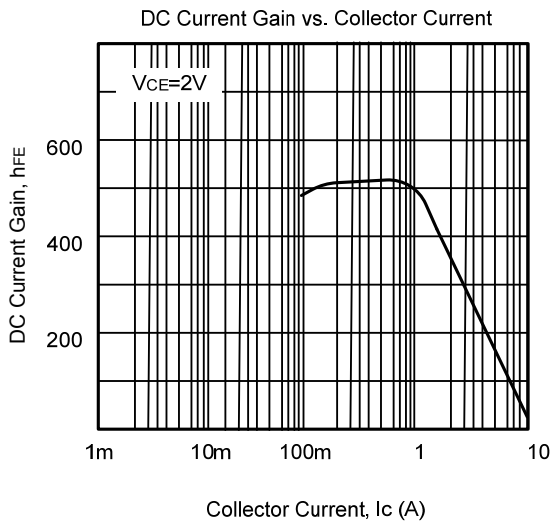
2. Pulse width=300 μs . Duty cycle $\leq 2\%$.

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$	20	100		V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}$ (Note)	20	27		V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}$	5	8.3		V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=16\text{V}$			100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4\text{V}$			100	nA
Collector Emitter Cut-Off Current	I_{CES}	$V_{CES}=16\text{V}$			100	nA
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=0.1\text{A}, I_B=10\text{mA}$		10	15	mV
		$I_C=1\text{A}, I_B=10\text{mA}$		70	150	mV
		$I_C=2.5\text{A}, I_B=50\text{mA}$		200	250	mV
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=2.5\text{A}, I_B=50\text{mA}$		0.89	1.0	V
Base-Emitter Turn-On Voltage (Note)	$V_{BE(ON)}$	$V_{CE}=2\text{V}, I_C=2.5\text{A}$		0.79	1.0	V
DC Current Gain (Note)	h_{FE}	$V_{CE}=2\text{V}, I_C=10\text{mA}$	200	400		
		$V_{CE}=2\text{V}, I_C=200\text{mA}$	300	450		
		$V_{CE}=2\text{V}, I_C=2\text{A}$	200	360		
		$V_{CE}=2\text{V}, I_C=6\text{A}$	100	180		
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	100	140		MHz
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}, f=1\text{MHz}$		23	30	pF
Turn-On Time	$t_{(ON)}$	$V_{CC}=10\text{V}, I_C=1\text{A}, I_{B1}=-I_{B2}=10\text{mA}$		170		nS
Turn-Off Time	$t_{(OFF)}$			400		nS

Note: Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

■ TYPICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)



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