

ELECTRICAL CHARACTERISTICS FOR 2N5152SMD05 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut Off Current	$V_{CE} = 60V$ $V_{BE} = 0$			1	μA
		$V_{CE} = 100V$ $V_{BE} = 0$			1	mA
I_{CEV}	Collector Cut Off Current	$V_{CE} = 60V$ $T_{case} = 150^{\circ}C$ $V_{BE} = -2V$			500	μA
I_{CEO}	Collector Cut Off Current	$V_{CE} = 40V$ $I_B = 0$			50	
I_{EBO}	Emitter Cut Off Current	$V_{EB} = 4V$ $I_C = 0$			1	μA
		$V_{EB} = 6V$ $I_C = 0$			1	mA
$V_{CEO(SUS)}$	Collector Emitter Saturation Voltage	$I_C = 100mA$ $I_B = 0$	75			
$V_{CE(sat)}$	Collector Emitter Saturation Voltage	$I_C = 2.5A$ $I_B = 250mA$			0.75	V
		$I_C = 5A$ $I_B = 500mA$			1.5	
$V_{BE(sat)}$	Base Emitter Saturation Voltage	$I_C = 2.5A$ $I_B = 250mA$			1.45	
		$I_C = 5A$ $I_B = 500mA$			2.2	
V_{BE}	Base Emitter Voltage	$I_C = 2.5A$ $V_{CE} = 5V$			1.45	
h_{FE}	DC Current Gain	$I_C = 50mA$ $V_{CE} = 5V$	20			—
		$I_C = 2.5A$ $V_{CE} = 5V$	30		90	
		$I_C = 5A$ $V_{CE} = 5V$ $T_{case} = -55^{\circ}C$	20			
		$I_C = 2.5A$ $V_{CE} = 5V$	15			
C_{CBO}	Collector Base Capacitance	$I_E = 0$ $V_{CB} = 10V$ $f = 1MHz$			250	pF
h_{FE}	Small Signal Current Gain	$I_C = 0.1A$ $V_{CE} = 5V$ $f = 1KHz$	20			—
		$I_C = 0.5A$ $V_{CE} = 5V$ $f = 20MHz$	3			
t_{on}	Turn On Time	$I_C = 5A$ $V_{CC} = 30V$ $I_{B1} = 0.5A$		0.5		μs
t_{off}	Turn Off Time	$I_C = 5A$ $V_{CC} = 30V$ $I_{B1} = -I_{B2} = 0.5A$		1.3		μs

* Pulse test $t_p = 300\mu s$, $\delta < 2\%$

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case			15	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient			175	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS FOR 2N5154SMD05 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES} Collector Cut Off Current	$V_{CE} = 60V$ $V_{BE} = 0$			1	μA
	$V_{CE} = 100V$ $V_{BE} = 0$			1	mA
I_{CEV} Collector Cut Off Current	$V_{CE} = 60V$ $T_{case} = 150^{\circ}C$ $V_{BE} = -2V$			500	μA
I_{CEO} Collector Cut Off Current	$V_{CE} = 40V$ $I_B = 0$			50	
I_{EBO} Emitter Cut Off Current	$V_{EB} = 4V$ $I_C = 0$			1	μA
	$V_{EB} = 6V$ $I_C = 0$			1	mA
$V_{CEO(SUS)}$ Collector Emitter Saturation Voltage	$I_C = 100mA$ $I_B = 0$	75			V
$V_{CE(sat)}$ Collector Emitter Saturation Voltage	$I_C = 2.5A$ $I_B = 250mA$			0.75	
	$I_C = 5A$ $I_B = 500mA$			1.5	
$V_{BE(sat)}$ Base Emitter Saturation Voltage	$I_C = 2.5A$ $I_B = 250mA$			1.45	
	$I_C = 5A$ $I_B = 500mA$			2.2	
V_{BE} Base Emitter Voltage	$I_C = 2.5A$ $V_{CE} = 5V$			1.45	
h_{FE} DC Current Gain	$I_C = 50mA$ $V_{CE} = 5V$	50			—
	$I_C = 2.5A$ $V_{CE} = 5V$	70		200	
	$I_C = 5A$ $V_{CE} = 5V$ $T_{case} = -55^{\circ}C$	40			
	$I_C = 2.5A$ $V_{CE} = 5V$	35			
C_{CBO} Collector Base Capacitance	$I_E = 0$ $V_{CB} = 10V$ $f = 1MHz$			250	pF
h_{FE} Small Signal Current Gain	$I_C = 0.1A$ $V_{CE} = 5V$ $f = 1KHz$	20			—
	$I_C = 0.5A$ $V_{CE} = 5V$ $f = 20MHz$	3			
t_{on} Turn On Time	$I_C = 5A$ $V_{CC} = 30V$ $I_{B1} = 0.5A$		0.5		μs
t_{off} Turn Off Time	$I_C = 5A$ $V_{CC} = 30V$ $I_{B1} = -I_{B2} = 0.5A$		1.3		μs

* Pulse test $t_p = 300\mu s$, $\delta < 2\%$

THERMAL DATA

$R_{thj-case}$ Thermal Resistance Junction-case			15	$^{\circ}C/W$
$R_{thj-amb}$ Thermal Resistance Junction-ambient			175	$^{\circ}C/W$