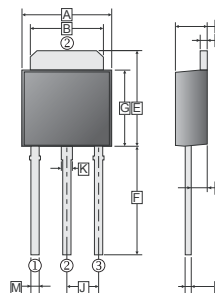
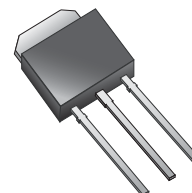


RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

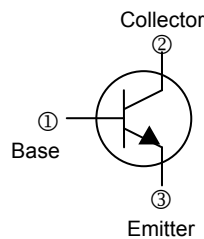
- Low Collector-to-Emitter Saturation Voltage
- Excellent Linearity of h_{FE}
- High f_T
- Fast Switching Time

TO-251



CLASSIFICATION OF h_{FE}

Product-Rank	2SD1815-Q	2SD1815-R	2SD1815-S
Range	70~140	100~200	140~280



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.35	6.80	G	5.40	6.25
B	4.90	5.50	H	0.85	1.50
C	2.15	2.40	J	2.30	
D	0.43	0.90	K	0.60	1.05
E	6.50	7.50	M	0.50	0.90
F	7.20	9.65	P	0.43	0.62

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	120	V
Collector to Emitter Voltage	V_{CEO}	100	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	3	A
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}$	120	-	-	V	$I_C=10\mu\text{A}$, $I_E=0$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	100	-	-	V	$I_C=1\text{mA}$, $I_B=0$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	6	-	-	V	$I_E=10\mu\text{A}$, $I_C=0$
Collector cut-off current	I_{CBO}	-	-	1	μA	$V_{CB}=100\text{V}$, $I_E=0$
Emitter cut-off current	I_{EBO}	-	-	1	μA	$V_{EB}=4\text{V}$, $I_C=0$
DC current gain	h_{FE}	70	-	280		$V_{CE}=5\text{V}$, $I_C=500\text{mA}$
		40	-	-		$V_{CE}=5\text{V}$, $I_C=2\text{A}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=1.5\text{A}$, $I_B=150\text{mA}$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1.2	V	$I_C=1.5\text{A}$, $I_B=150\text{mA}$
Transition frequency	f_T	-	180	-	MHz	$V_{CE}=10\text{V}$, $I_C=500\text{mA}$
Collector Output Capacitance	C_{OB}	-	25	-	pF	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$
Turn-on time	t_{on}	-	100	-	nS	$V_{CC}=50\text{V}$, $I_C=1.5\text{A}$, $I_{B1}=-I_{B2}=-0.15\text{A}$
Storage time	t_s	-	900	-		
Fall time	t_f	-	50	-		

CHARACTERISTIC CURVES

