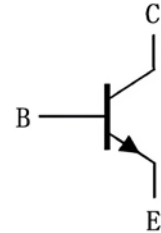


Features

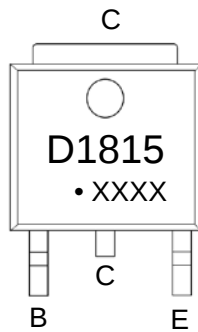
- Low Collector-to-Emitter Saturation Voltage
- Excellent Linearity of h_{FE}
- High f_T
- Fast Switching Time



TO-252-2L top view



Schematic diagram



Marking and pin assignment



Pb-Free



RoHS



Halogen-Free

Maximum Ratings($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	3	A
$P_C^{(2)}$	Collector Power Dissipation	1.25	W
$R_{\theta JC}^{(1)}$	Thermal resistance from junction to case	5.0	$^{\circ}\text{C/W}$
$R_{\theta JA}^{(2)}$	Thermal Resistance From Junction To Ambient	100	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
2SD1815	TO-252-2L	D1815	2,500	5,000	35,000	13"reel

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =10μA, I _E =0	120	--	--	V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =1mA, I _B =0	100	--	--	V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =10μA, I _C =0	6	--	--	V
I _{CBO}	Collector cut-off current	V _{CB} =100V, I _E =0	--	--	1	μA
I _{EBO}	Emitter cut-off current	V _{EB} =4V, I _C =0	--	--	1	μA
H _{FE(1)}	DC current gain	V _{CE} =5V, I _C =500mA	70	--	400	
H _{FE(2)}		V _{CE} =5V, I _C =2A	40	--	--	
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =1.5A, I _B =0.15A	--	--	0.4	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C =1.5A, I _B =0.15A	--	--	1.2	V
C _{ob}	Collector output capacitance	V _{CB} =10V, I _E =0, f=1MHz	--	25	--	pF
f _T	Transition frequency	V _{CE} =10V, I _C =500mA	--	180	--	MHz
t _{on}	Turn-on time	V _{CC} =50V, I _C =1.5A, I _{B1} =-I _{B2} =-0.15A	--	100	--	ns
t _f	Fall time		--	50	--	ns
t _s	Storage time		--	900	--	ns

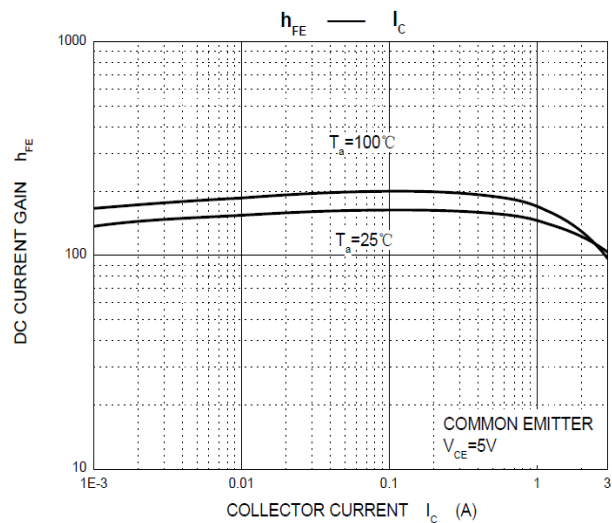
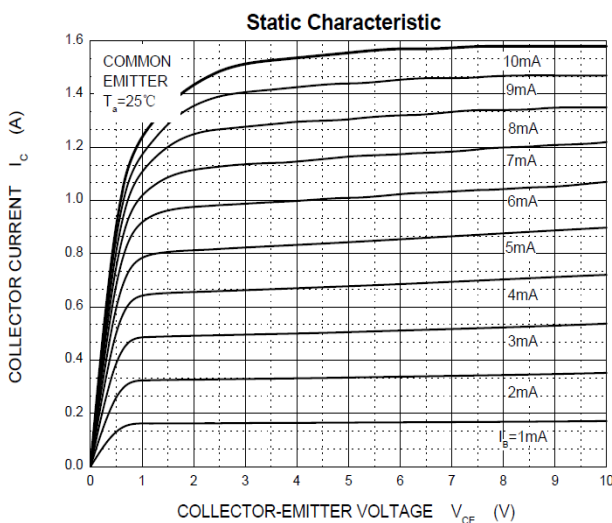
Notes:

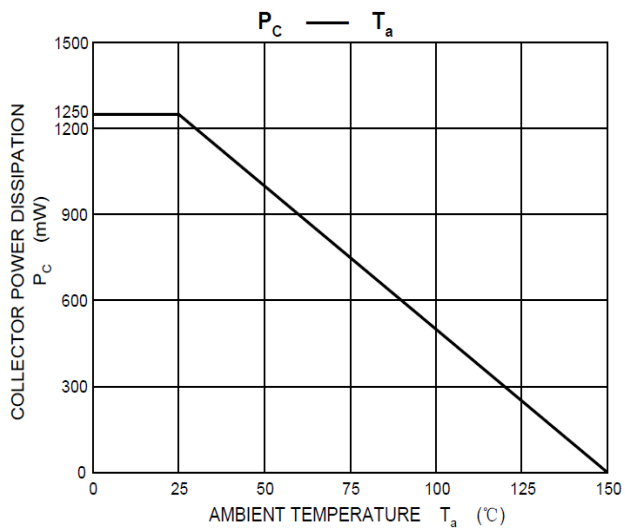
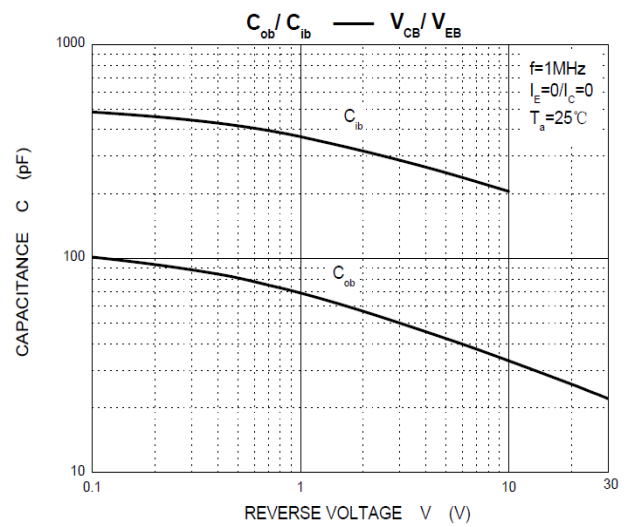
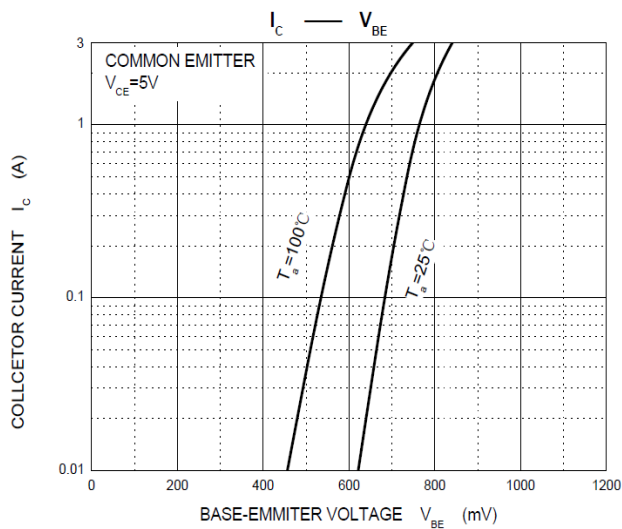
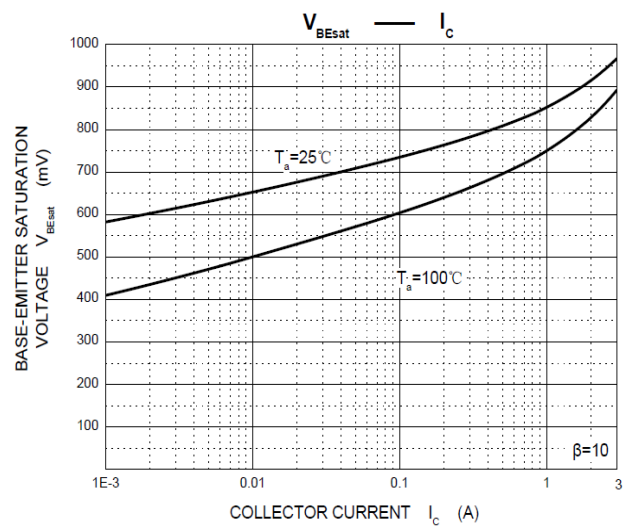
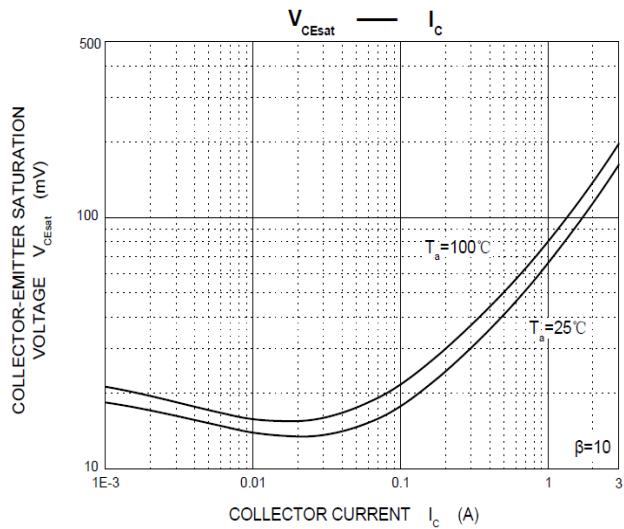
 1. T_C=25°C.

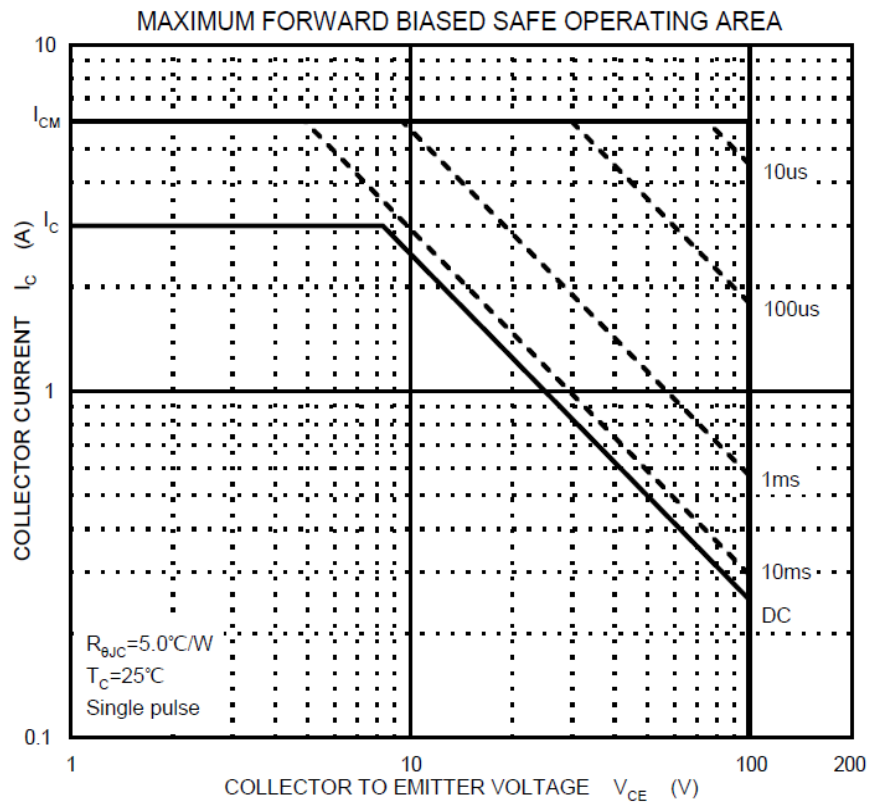
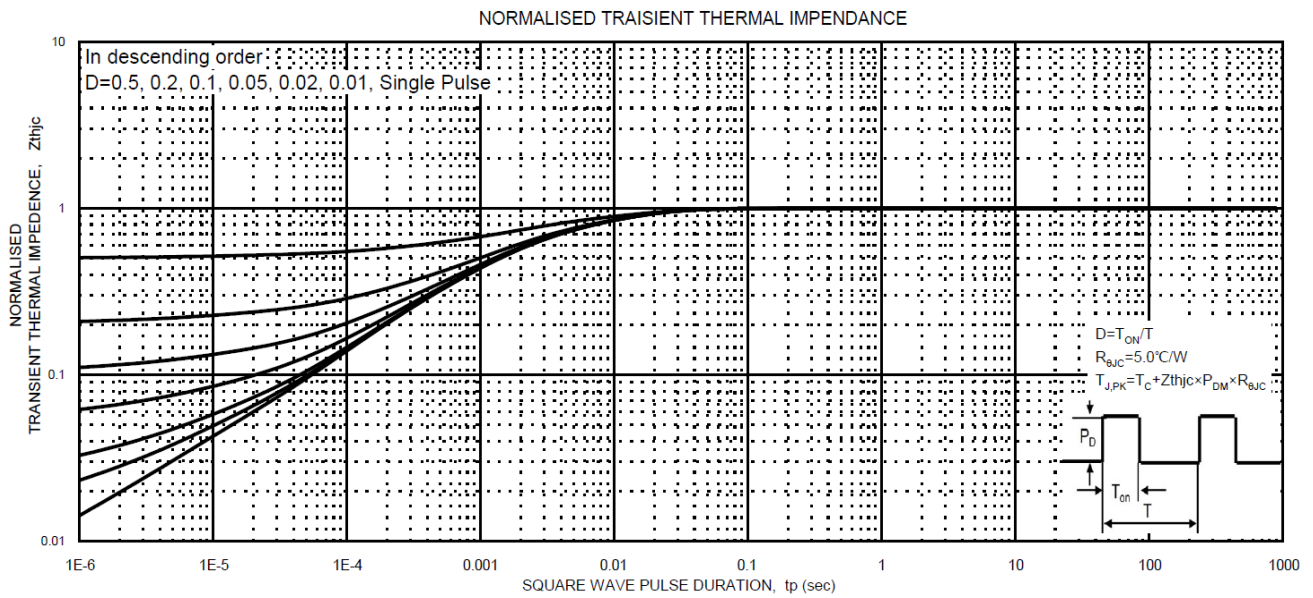
 2. Device mounted on 1 in2 FR-4 board with 2oz. single-sided Copper, in a still air environment with T_A=25°C

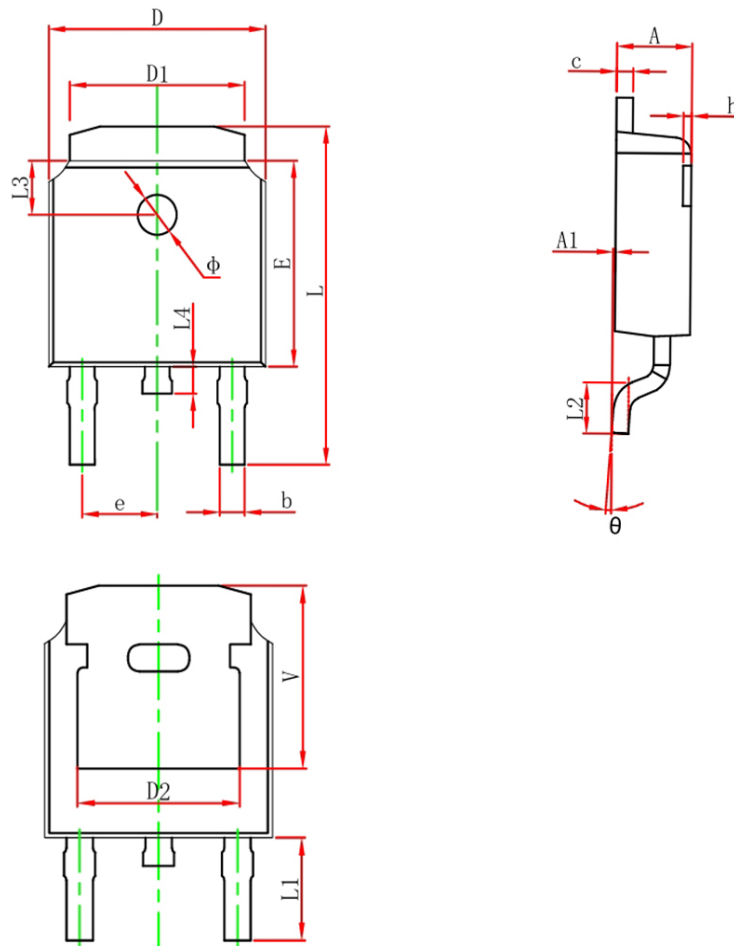
Classification Of h_{FE}

Rank	Q	R	S	T
Range	70-140	100-200	140-280	200-400

Typical Characteristics






TO-252-2L Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
ϕ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	