

Low Vcesat NPN Epitaxial Planar Transistor

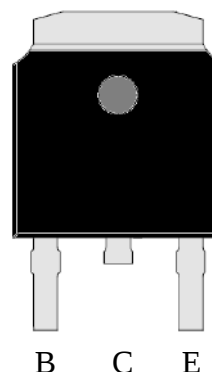
Features:

- Low collector-to-emitter saturation voltage
- High-speed switching
- Large current capability
- Good linearity of h_{FE}
- High f_T
- RoHS compliant package

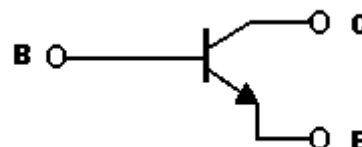
Applications:

- Suitable for relay drivers, high speed inverters, converters, and other high current switching applications.

TO-252(DPAK)



BV_{CEO}	100V
I_C	4A



B : Base

C : Collector

E : Emitter

Ordering Information

Device	Package	Shipping
KJD1816	TO-252 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CBO}	120	V
Collector-Emitter Voltage	V _{CEO}	100	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current (DC)	I _C	4	A
Collector Current (Pulse)	I _{CP}	8 (Note 1)	
Base Current	I _B	1.2	A
Power Dissipation @ T _A =25°C	P _D	1	W
Power Dissipation @ T _C =25°C	P _D	20	
Thermal Resistance, Junction to Ambient	R _{θJA}	125	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	6.25	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

Note : 1. Single Pulse , P_w ≤ 380μs, Duty ≤ 2%.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	120	-	-	V	I _C =10μA, I _E =0
*BV _{CEO}	100	-	-	V	I _C =1mA, I _B =0
BV _{EBO}	6	-	-	V	I _C =10μA, I _C =0
I _{CBO}	-	-	1	μA	V _{CB} =100V, I _E =0
I _{EBO}	-	-	1	μA	V _{EB} =4V, I _C =0
*V _{CE(sat)} 1	-	57	100	mV	I _C =1A, I _B =50mA
*V _{CE(sat)} 2	-	86	150	mV	I _C =2A, I _B =200mA
*R _{CE(sat)}	-	57	100	mΩ	I _C =1A, I _B =50mA
*V _{BE(sat)}	-	0.9	1.2	V	I _C =2A, I _B =200mA
*h _{FE} 1	180	-	560	-	V _{CE} =5V, I _C =500mA
*h _{FE} 2	120	-	-	-	V _{CE} =5V, I _C =3A
f _T	-	180	-	MHz	V _{CE} =10V, I _C =500mA
C _{ob}	-	40	-	pF	V _{CB} =10V, f=1MHz
t _{on}	-	100	-	ns	V _{CC} =50V, I _C =10I _B 1=-10I _B 2=2A, R _L =25Ω
t _{stg}	-	900	-	ns	
t _f	-	50	-	ns	

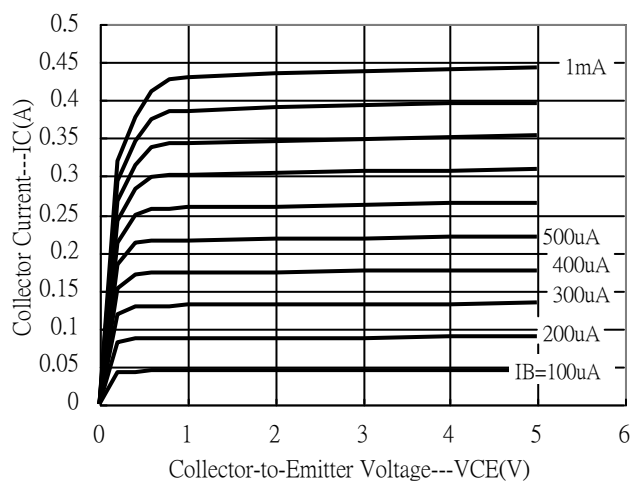
*Pulse Test : Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Classification of h_{FE} 1

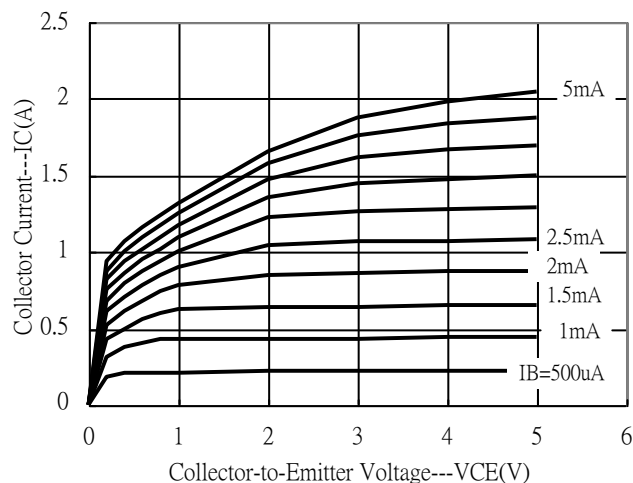
Rank	R	S
Range	180~390	270~560

Typical Characteristics

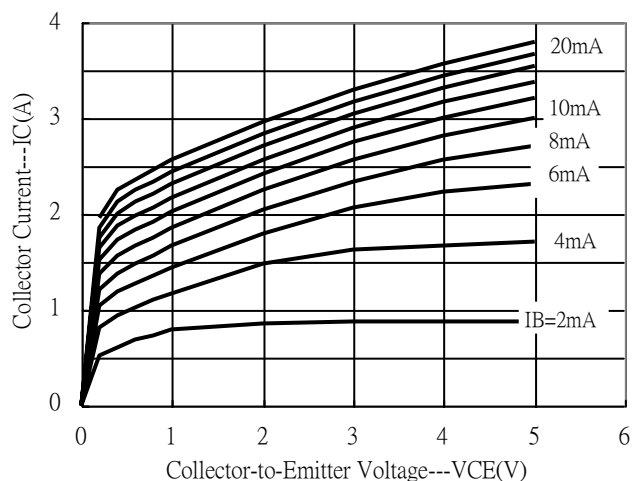
Emitter Grounded Output Characteristics



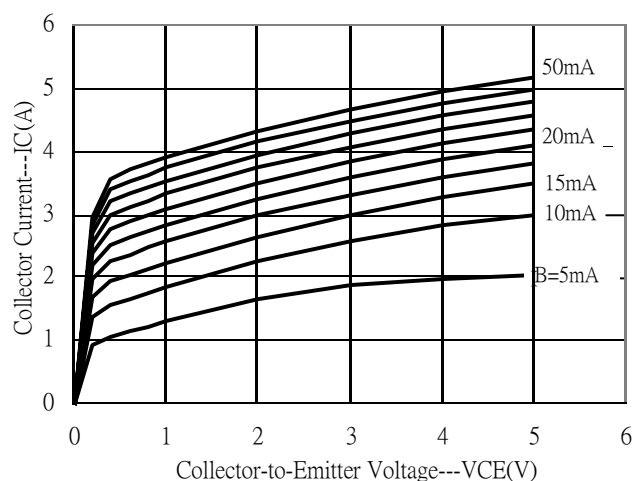
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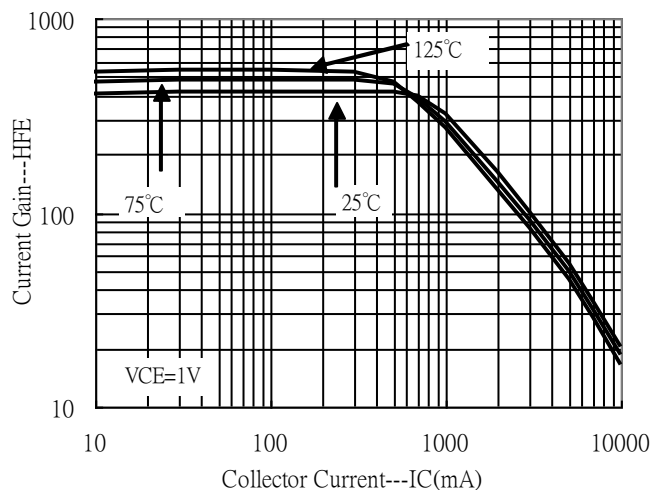


Emitter Grounded Output Characteristics

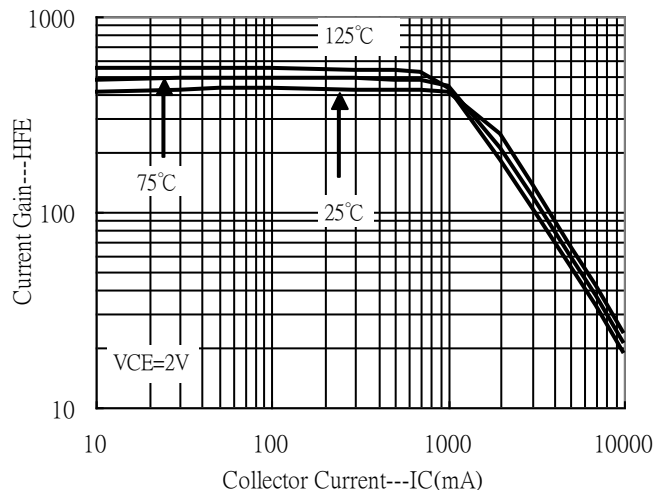


Typical Characteristics(Cont.)

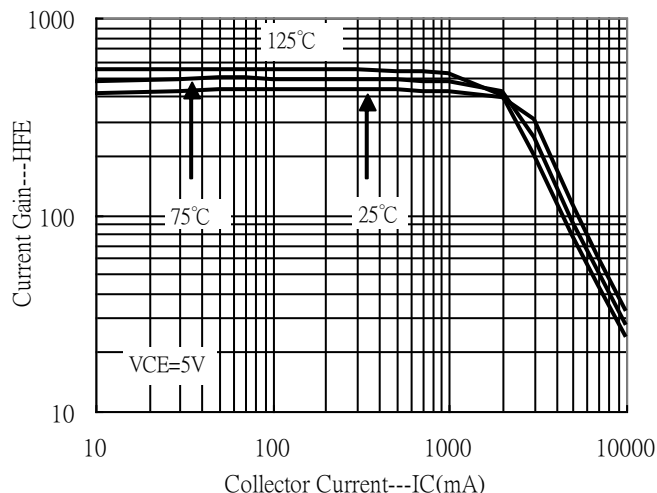
Current Gain vs Collector Current



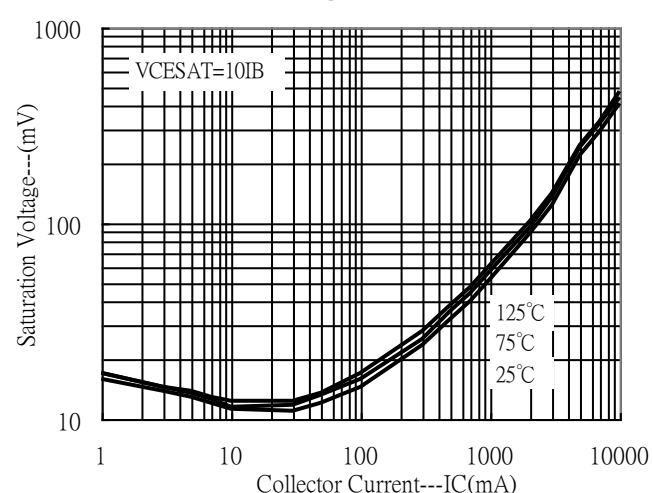
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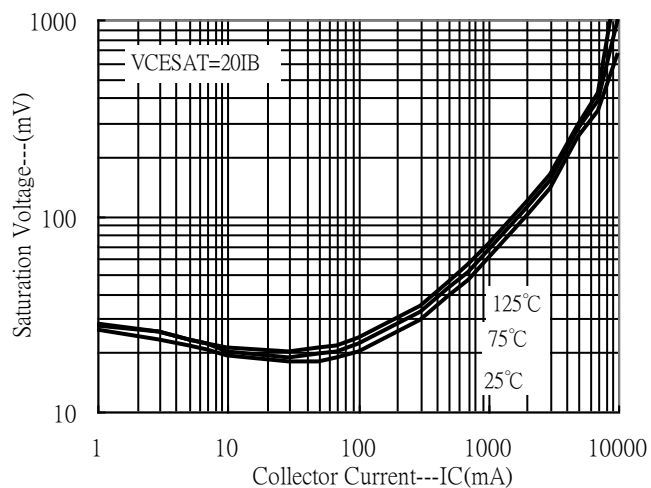
Current Gain vs Collector Current



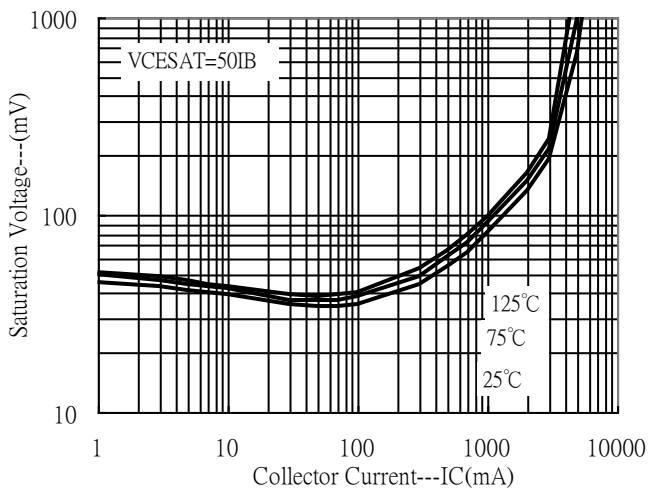
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current

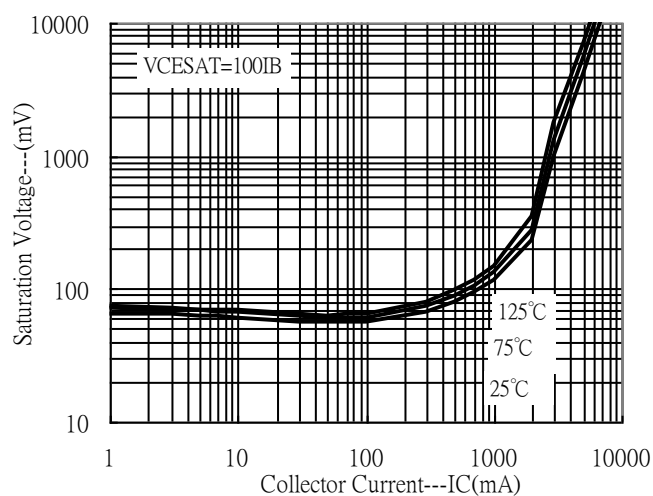


Saturation Voltage vs Collector Current

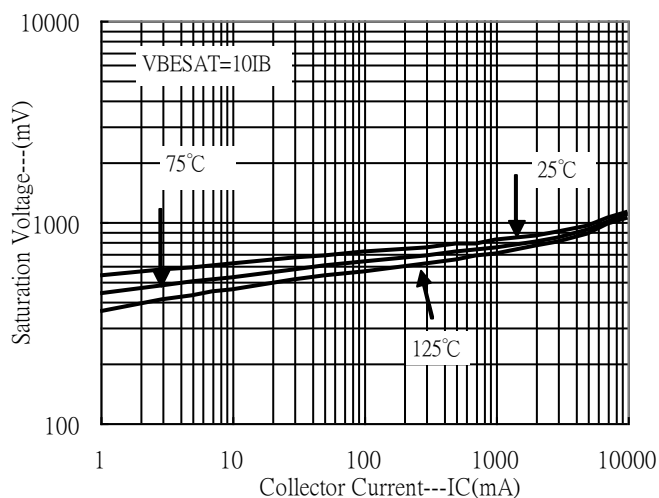


Typical Characteristics(Cont.)

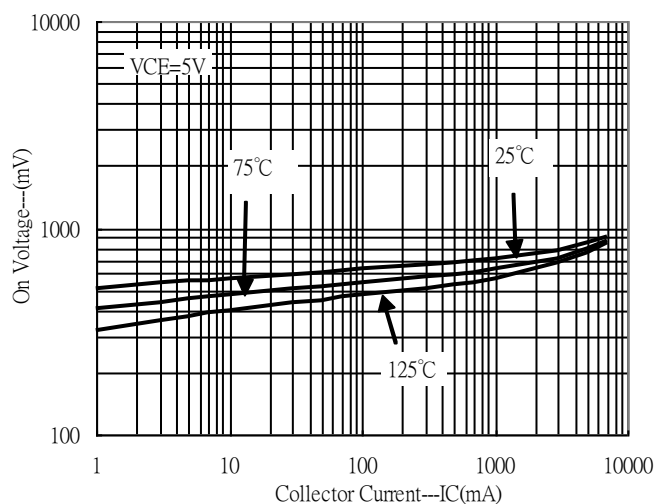
Saturation Voltage vs Collector Current



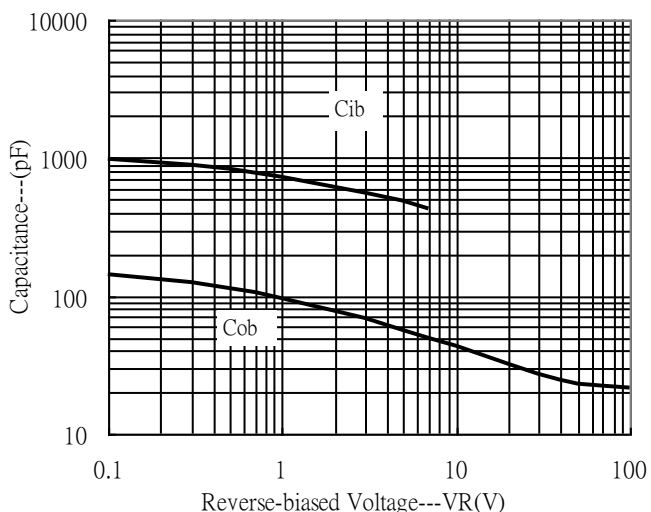
Saturation Voltage vs Collector Current



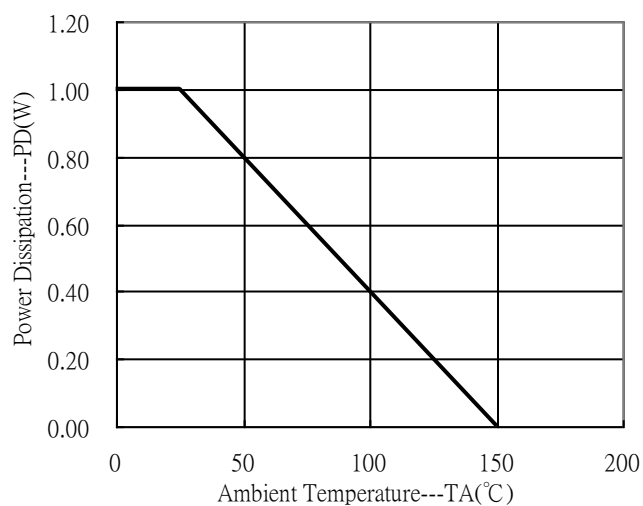
On Voltage vs Collector Current



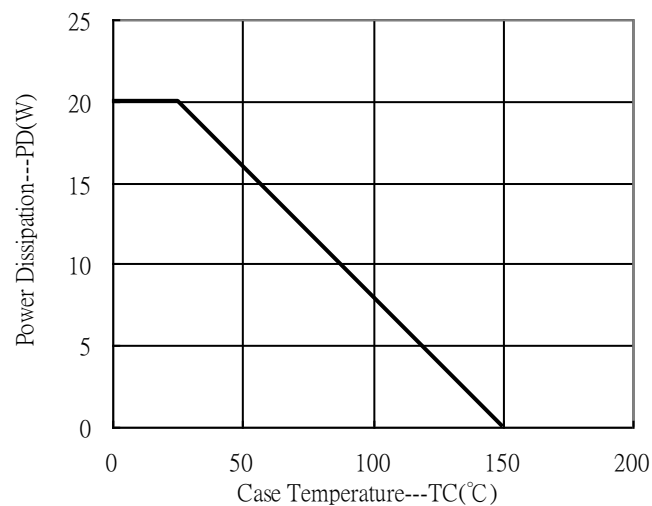
Capacitance vs Reverse-biased Voltage



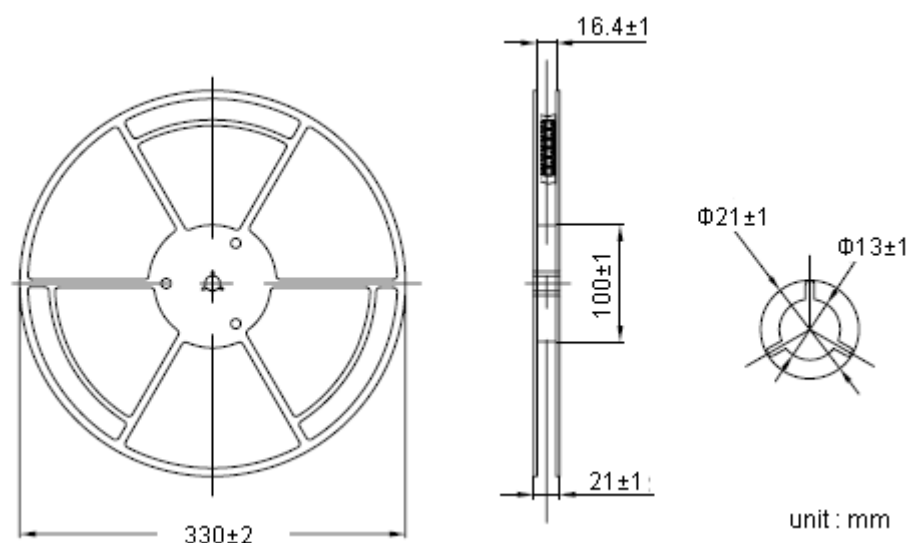
Power Derating Curve



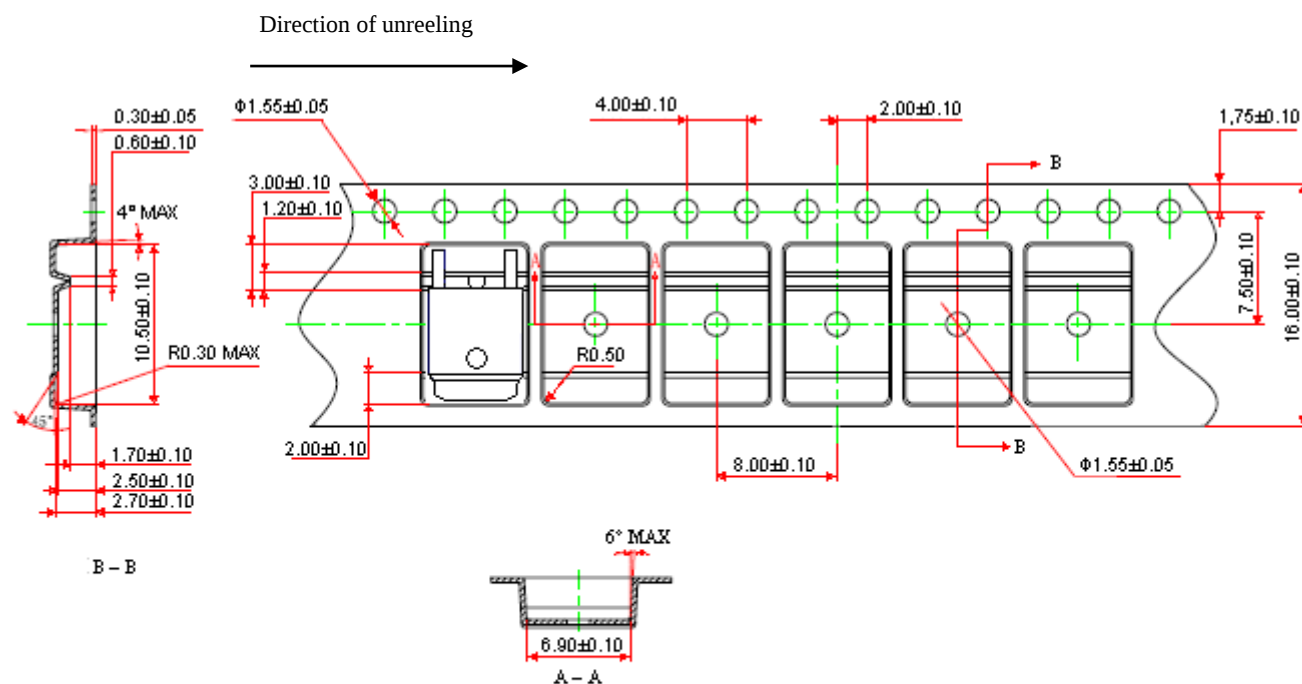
Power Derating Curve



Reel Dimension



Carrier Tape Dimension

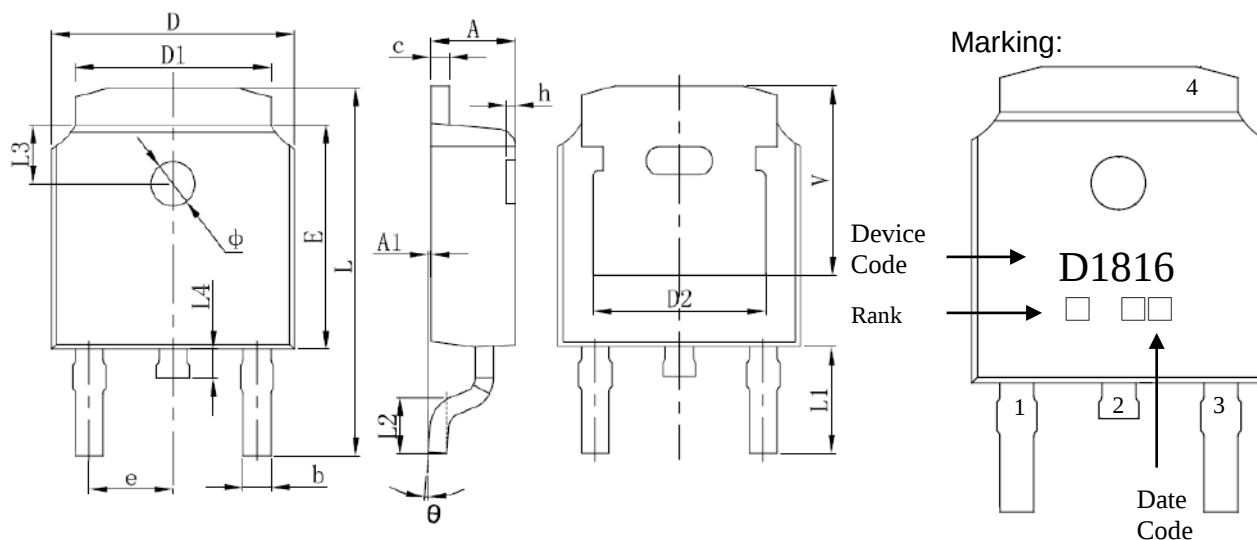


Notes:

- Notes:
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
 2. Camber not to exceed 1mm in 100mm.
 3. Material: conductive black polystyrene, antistatic coated : $10^5 \Omega/\square \sim 10^{11} \Omega/\square$

unit : mm

TO-252 Dimension



3-Lead TO-252 Plastic Surface Mount Package

Date Code :

First code : Year code, Last digit of Christian Year

Second Code : Month code, 1~9, A, B, C

Style: Pin 1.Base 2.Collector 3.Emitter
 4.Collector

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.087	0.094	2.200	2.400	L	0.382	0.406	9.712	10.312
A1	0.000	0.005	0.000	0.127	L1	0.114	REF	2.900	REF
b	0.025	0.030	0.635	0.770	L2	0.055	0.067	1.400	1.700
c	0.018	0.023	0.460	0.580	L3	0.063	REF	1.600	REF
D	0.256	0.264	6.500	6.700	L4	0.024	0.039	0.600	1.000
D1	0.201	0.215	5.100	5.460	Φ	0.043	0.051	1.100	1.300
D2	0.190	REF	4.830	REF	θ	0°	8°	0°	8°
E	0.236	0.244	6.000	6.200	h	0.000	0.012	0.000	0.300
e	0.086	0.094	2.186	2.386	v	0.207	REF	5.250	REF