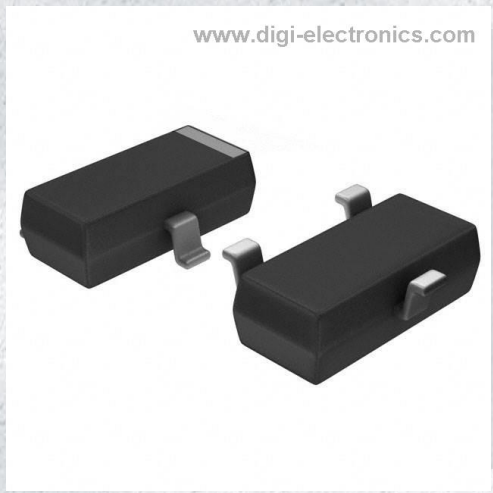
BCR183E6359HTMA1 Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	BCR183E6359HTMA1-DG
Manufacturer	Infineon Technologies
Manufacturer Product Number	BCR183E6359HTMA1
Description	TRANS PREBIAS NPN 50V SOT23
Detailed Description	Pre-Biased Bipolar Transistor (BJT) NPN - Pre-Biased 50 V 100 mA 200 MHz 200 mW Surface Mount PG-SOT23

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

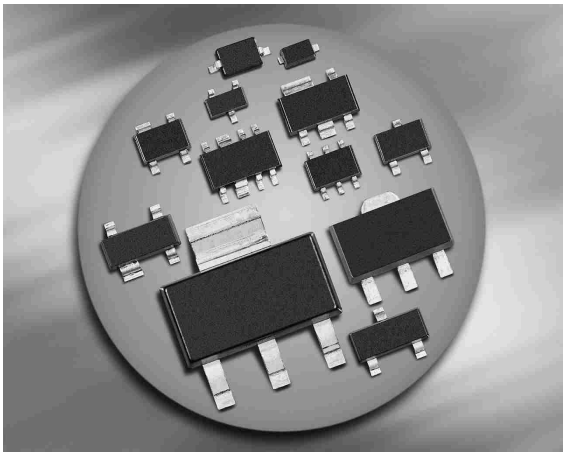
Manufacturer Product Number:	Manufacturer:
BCR183E6359HTMA1	Infineon Technologies
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN - Pre-Biased	100 mA
Voltage - Collector Emitter Breakdown (Max):	Resistor - Base (R1):
50 V	10 kOhms
Resistor - Emitter Base (R2):	DC Current Gain (hFE) (Min) @ Ic, Vce:
10 kOhms	30 @ 5mA, 5V
Vce Saturation (Max) @ Ib, Ic:	Current - Collector Cutoff (Max):
300mV @ 500µA, 10mA	100nA (ICBO)
Frequency - Transition:	Power - Max:
200 MHz	200 mW
Grade:	Qualification:
Automotive	AEC-Q101
Mounting Type:	Package / Case:
Surface Mount	TO-236-3, SC-59, SOT-23-3
Supplier Device Package:	Base Product Number:
PG-SOT23	BCR183

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

BCR183...

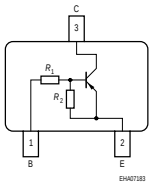
PNP Silicon Digital Transistor

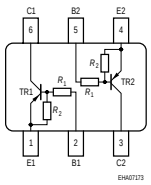


- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor (R_1 = 10 kΩ , R_2 = 10 kΩ)
- BCR183S / U: Two internally isolated transistors with good matching in one multichip package
- BCR183S / U: For orientation in reel see package information below
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101

AEC Qualified RoHS

BCR183 **BCR183S**
BCR183W **BCR183U**





Type	Marking	Pin Configuration						Package
BCR183	WMs	1=B	2=E	3=C	-	-	-	SOT23
BCR183S	WMs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SOT363
BCR183U	WMs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SC74
BCR183W	WMs	1=B	2=E	3=C	-	-	-	SOT323

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	40	
Input reverse voltage	$V_{i(rev)}$	10	
Collector current	I_C	100	mA
Total power dissipation-	P_{tot}		mW
BCR183, $T_S \leq 102°C$		200	
BCR183S, $T_S \leq 115°C$		250	
BCR183U, $T_S \leq 118°C$		250	
BCR183W, $T_S \leq 124°C$		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BCR183		≤ 240	
BCR183S		≤ 140	
BCR183U		≤ 133	
BCR183W		≤ 105	

[1]For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

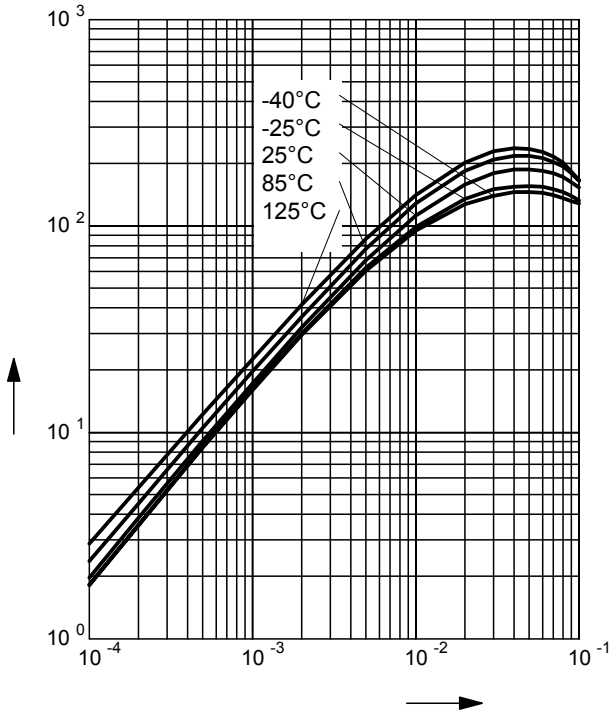
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage I_C = 100 µA, I_B = 0	$V_{(BR)CEO}$	50	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_E = 0	$V_{(BR)CBO}$	50	-	-	
Collector-base cutoff current V_{CB} = 40 V, I_E = 0	I_{CBO}	-	-	100	nA
Emitter-base cutoff current V_{EB} = 10 V, I_C = 0	I_{EBO}	-	-	0.75	mA
DC current gain[1)] I_C = 5 mA, V_{CE} = 5 V	h_{FE}	30	-	-	-
Collector-emitter saturation voltage[1)] I_C = 10 mA, I_B = 0.5 mA	V_{CEsat}	-	-	0.3	V
Input off voltage I_C = 100 µA, V_{CE} = 5 V	$V_{i(off)}$	0.8	-	1.8	
Input on voltage I_C = 2 mA, V_{CE} = 0.3 V	$V_{i(on)}$	1	-	2.5	
Input resistor	R_1	7	10	13	kΩ
Resistor ratio	R_1/R_2	0.9	1	1.1	-
AC Characteristics					
Transition frequency I_C = 10 mA, V_{CE} = 5 V, f = 100 MHz	f_T	-	200	-	MHz
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	3	-	pF

[1]Pulse test: t < 300µs; D < 2%

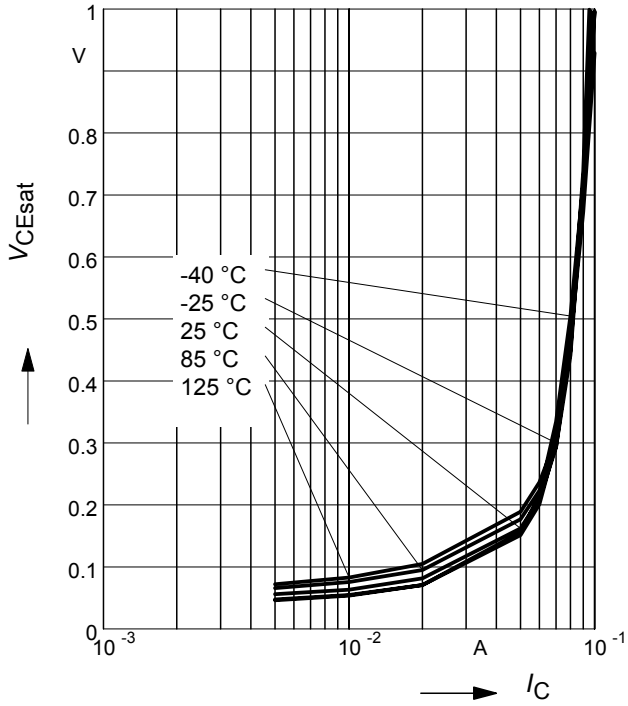
DC current gain h_{FE} = $f(I_C)$

V_{CE} = 5 V (common emitter configuration)



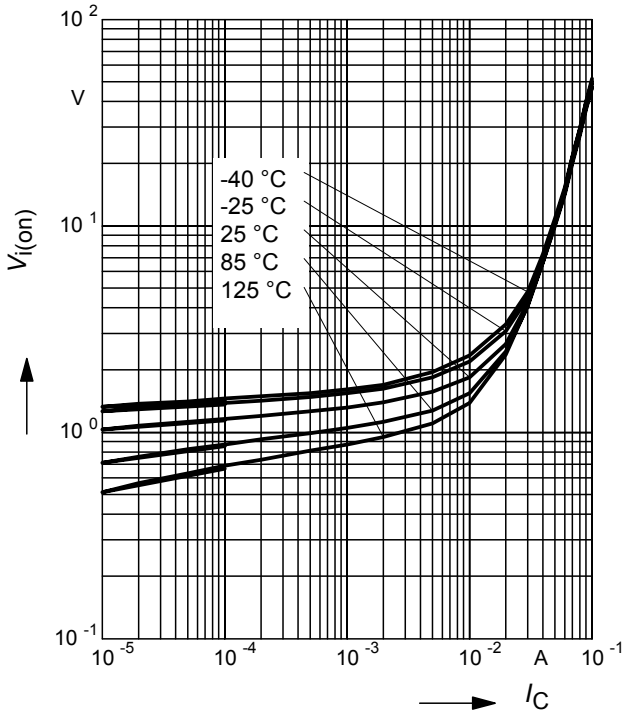
Collector-emitter saturation voltage

V_{CEsat}= $f(I_C)$, I_C/I_B = 20



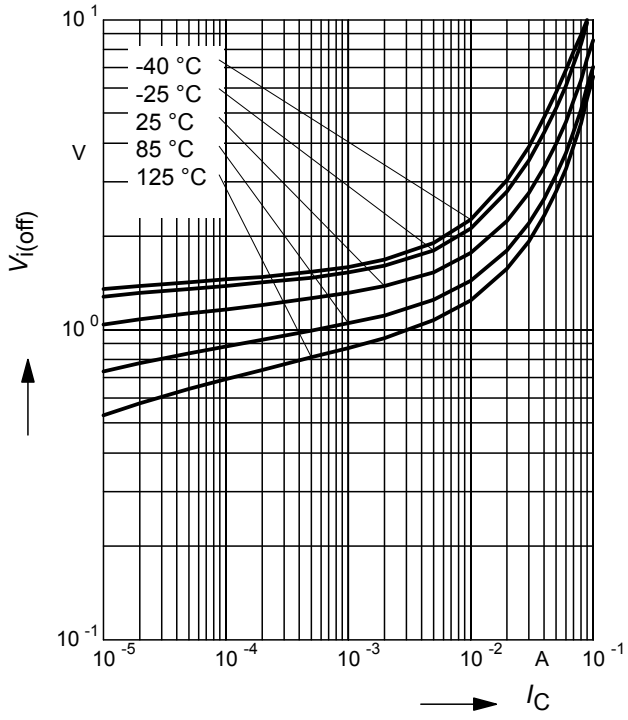
Input on Voltage $V_{i(on)}$ = $f(I_C)$

V_{CE} = 0.3V (common emitter configuration)

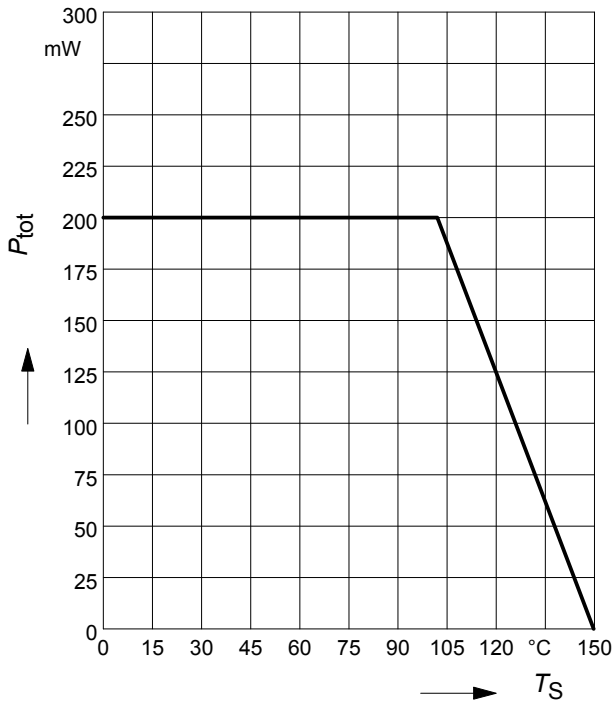


Input off voltage $V_{i(off)}$ = $f(I_C)$

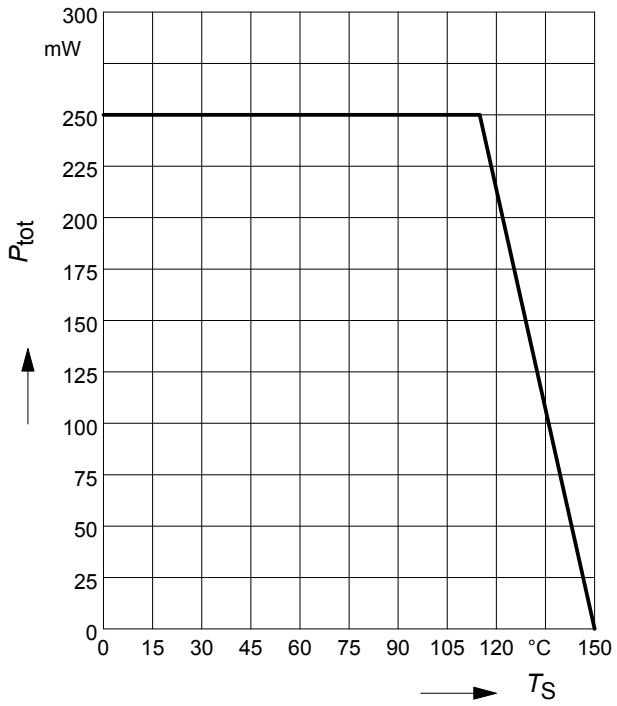
V_{CE} = 5V (common emitter configuration)



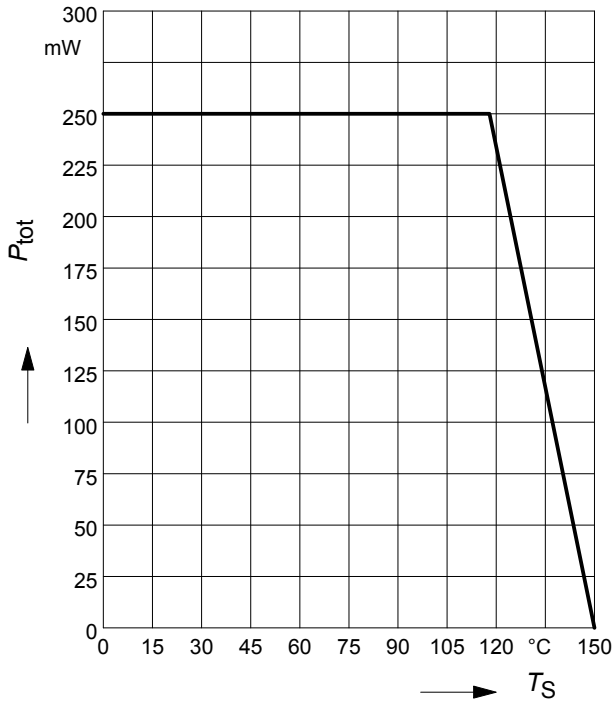
Total power dissipation $P_{tot} = f(T_S)$
BCR183



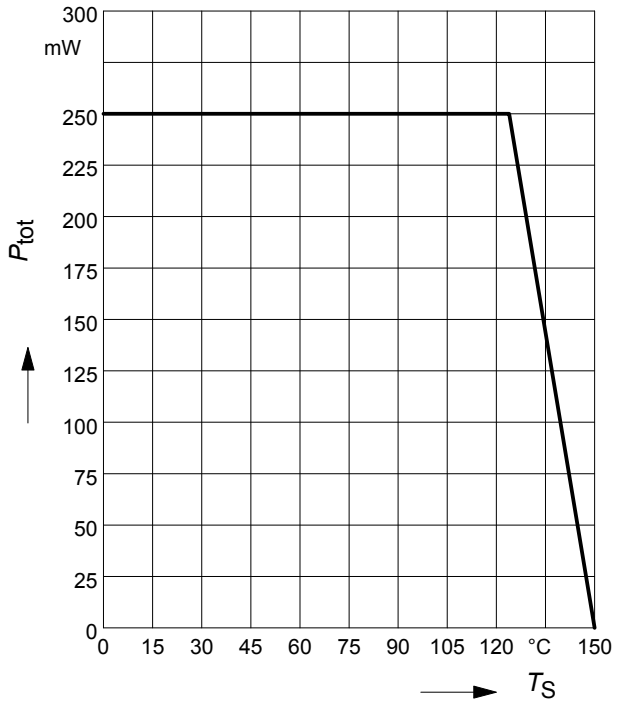
Total power dissipation $P_{tot} = f(T_S)$
BCR183S



Total power dissipation $P_{tot} = f(T_S)$
BCR183U

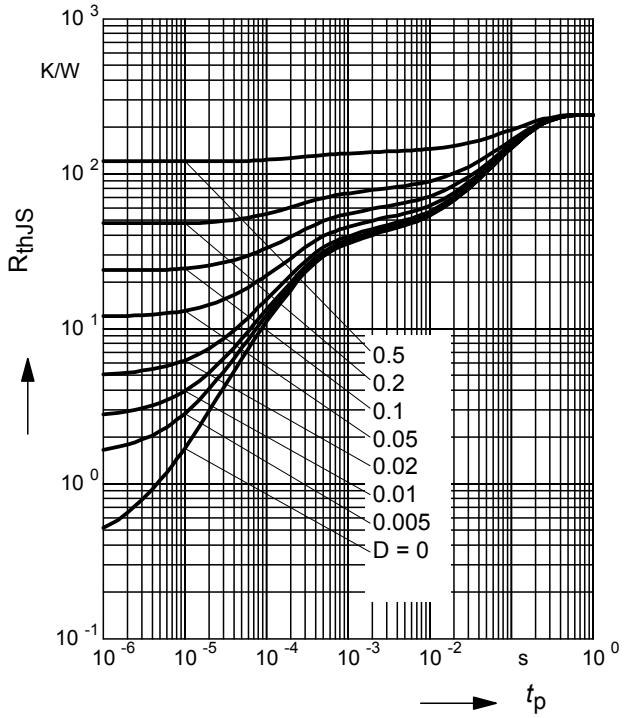


Total power dissipation $P_{tot} = f(T_S)$
BCR183W



Permissible Pulse Load $R_{thJS} = f(t_p)$

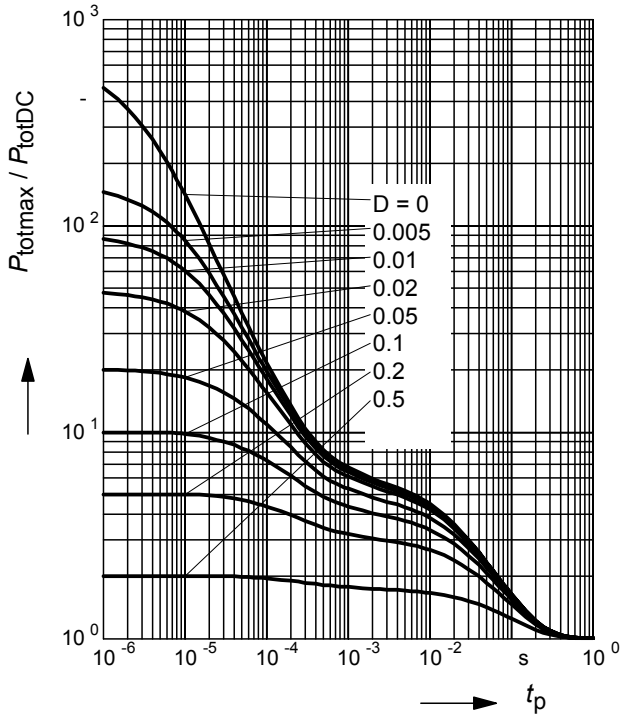
BCR183



Permissible Pulse Load

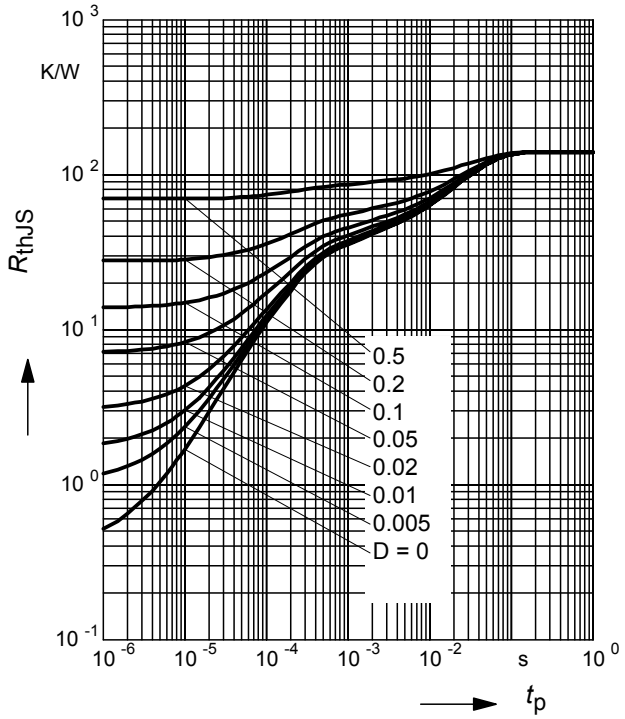
$P_{totmax}/P_{totDC} = f(t_p)$

BCR183



Permissible Puls Load $R_{thJS} = f(t_p)$

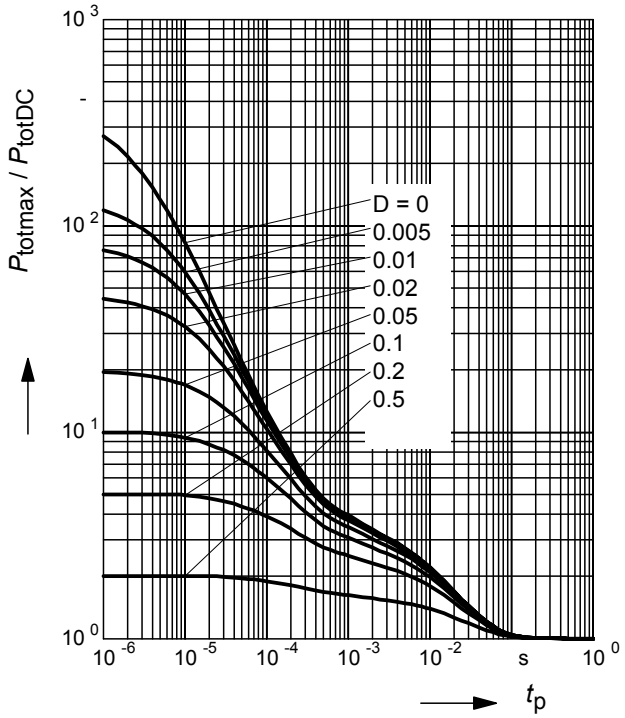
BCR183S



Permissible Pulse Load

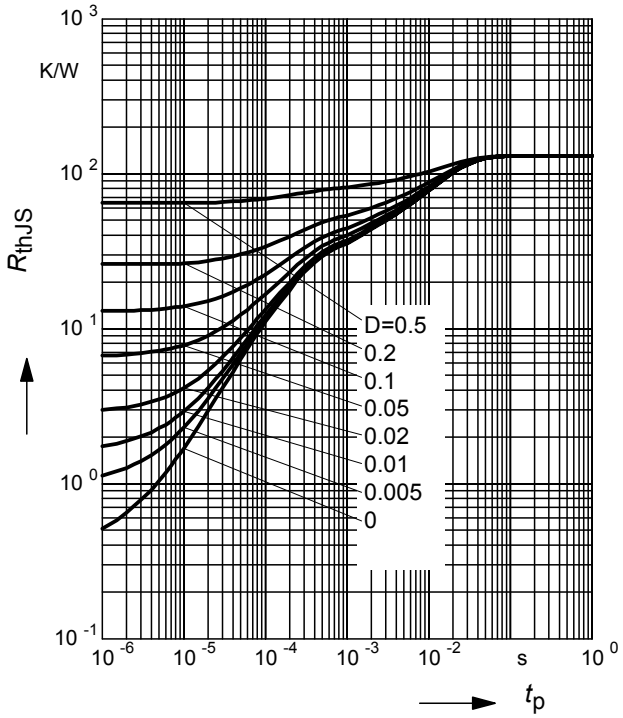
$P_{totmax}/P_{totDC} = f(t_p)$

BCR183S



Permissible Puls Load $R_{thJS} = f(t_p)$

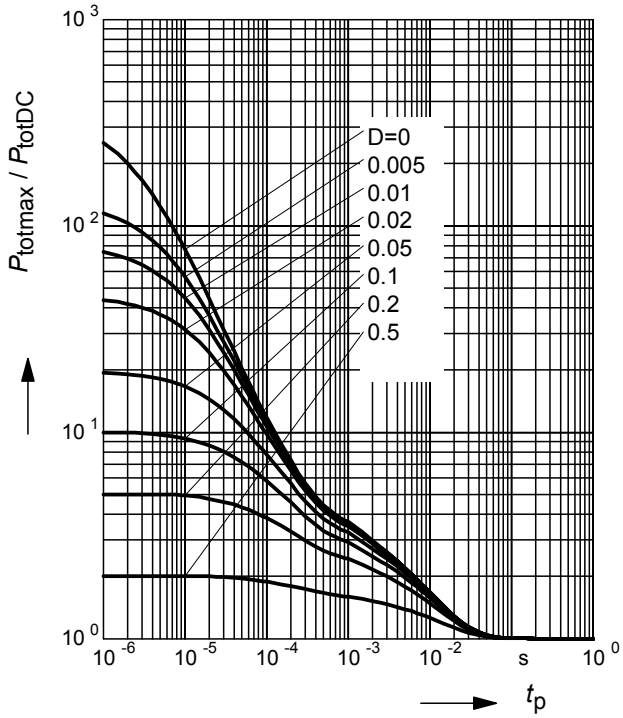
BCR183U



Permissible Pulse Load

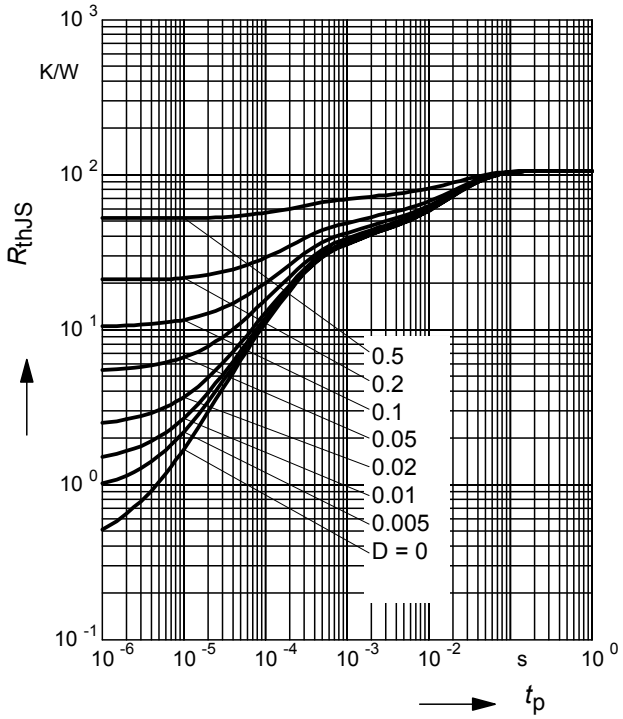
$P_{totmax}/P_{totDC} = f(t_p)$

BCR183U



Permissible Puls Load $R_{thJS} = f(t_p)$

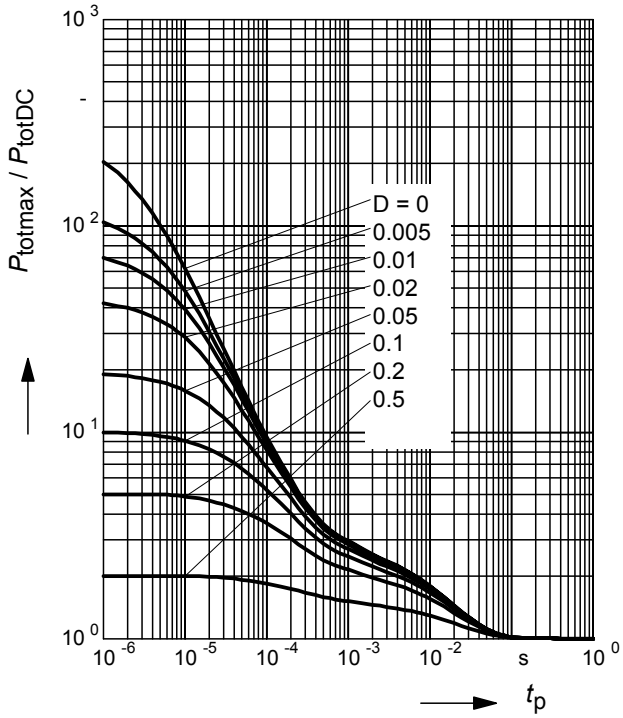
BCR183W



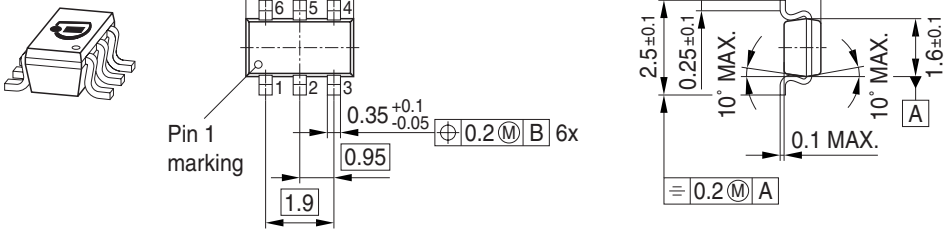
Permissible Pulse Load

$P_{totmax}/P_{totDC} = f(t_p)$

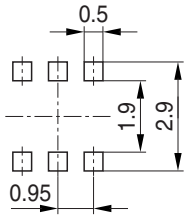
BCR183W



Package Outline

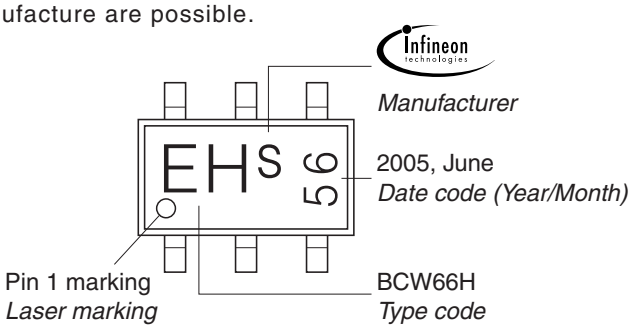


Foot Print



Marking Layout (Example)

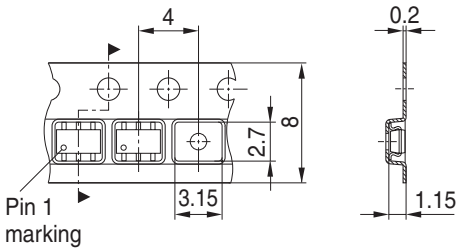
Small variations in positioning of
Date code, Type code and Manufacture are possible.



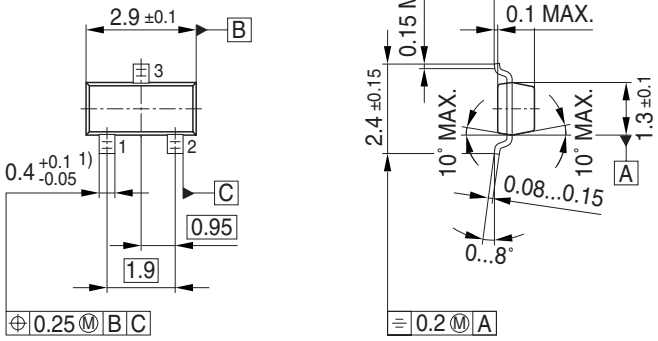
Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.

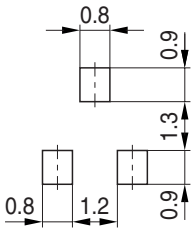


Package Outline



1) Lead width can be 0.6 max. in dambar area

Foot Print



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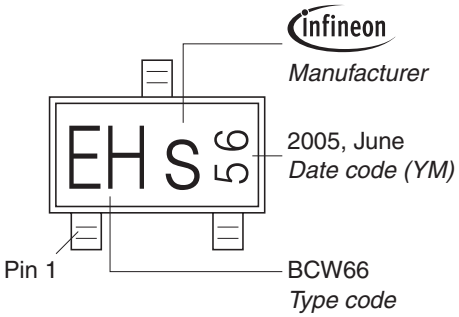

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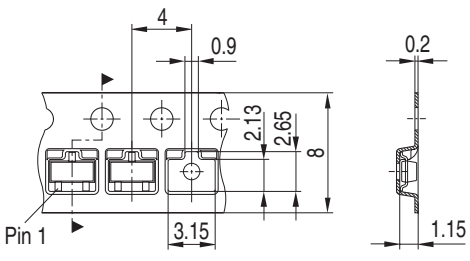

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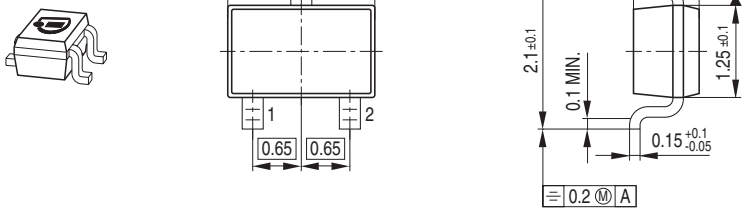

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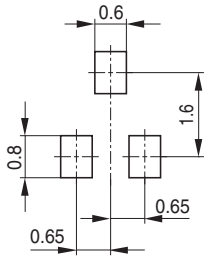

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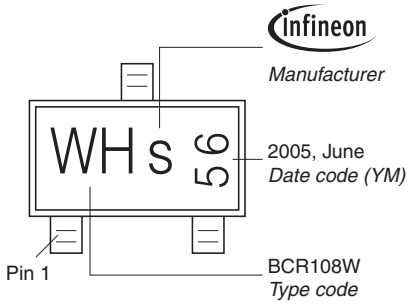

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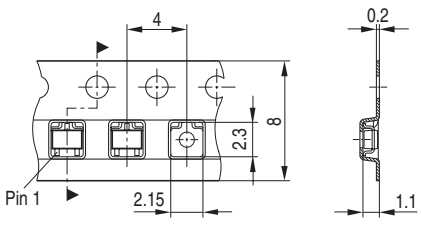

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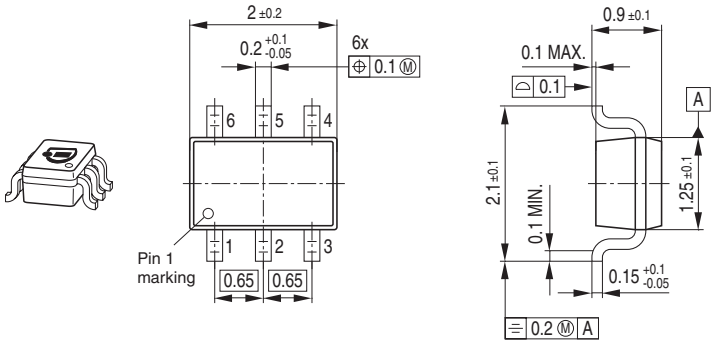

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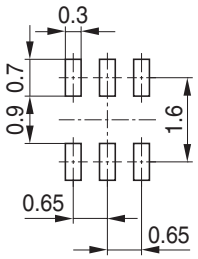

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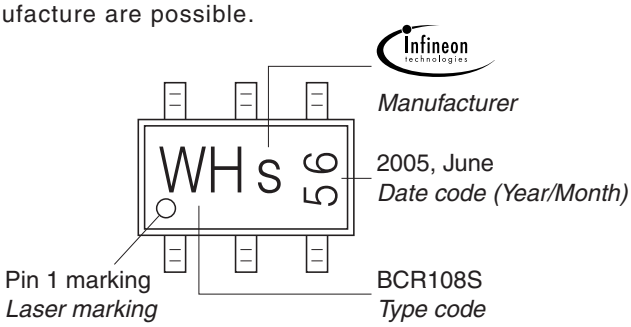

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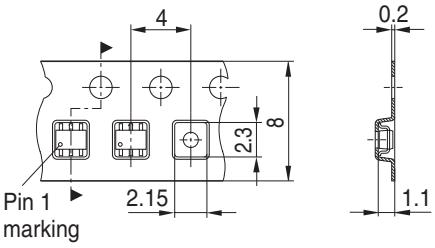

Edition 2009-11-16

Published by
Infineon Technologies AG
81726 Munich, Germany

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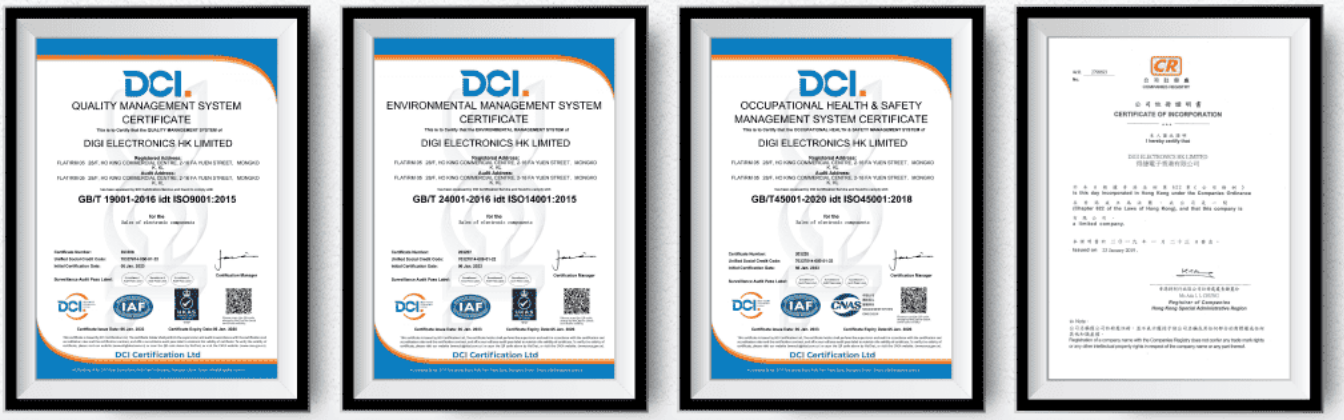

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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