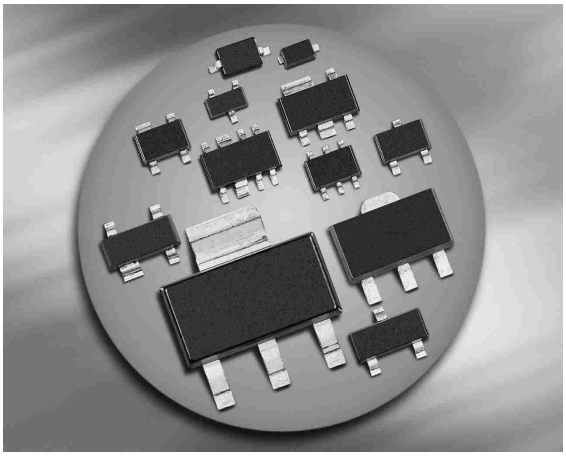
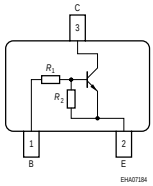
NPN Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor (R_1=4.7kΩ, R_2=4.7kΩ)
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



AEC Qualified RoHS

BCR112
BCR112W



Type	Marking	Pin Configuration						Package
BCR112	WFs	1=B	2=E	3=C	-	-	-	SOT23
BCR112W	WFs	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	$V_{i(fwd)}$	30	
Input reverse voltage	$V_{i(rev)}$	10	
Collector current	I_C	100	mA
Total power dissipation- BCR112, T_S ≤102°C BCR112W, T_S ≤124°C	P_{tot}	 200 250	mW
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
BCR112		≤ 240	
BCR112W		≤ 105	

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

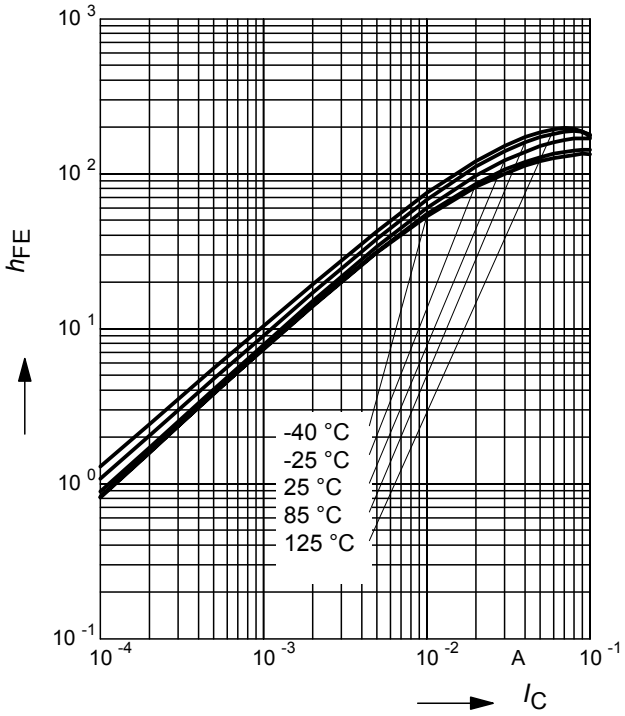
Electrical Characteristics at T_A = 25°C, unless otherwise specified

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}	-	-	1.61	mA
DC current gain[1)] I_C = 5 mA, V_{CE} = 5 V	h_{FE}	20	-	-	-
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	-	1.5	
Input on voltage I_C = 2 mA, V_{CE} = 0.3 V	$V_{i(on)}$	1	-	2.5	
Input resistor	R_1	3.2	4.7	6.2	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	-	140	-	MHz
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	3	-	pF

[1]Pulse test: t < 300µs; D < 2%

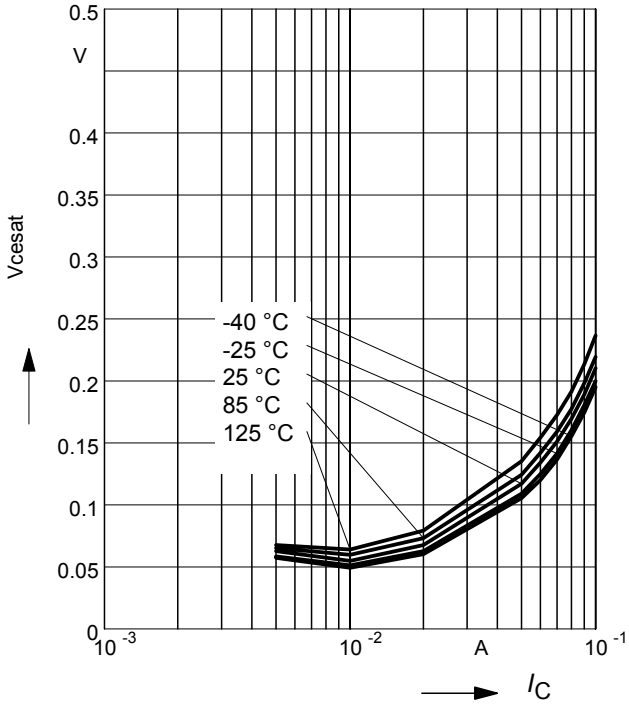
DC current gain $h_{FE} = f(I_C)$

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



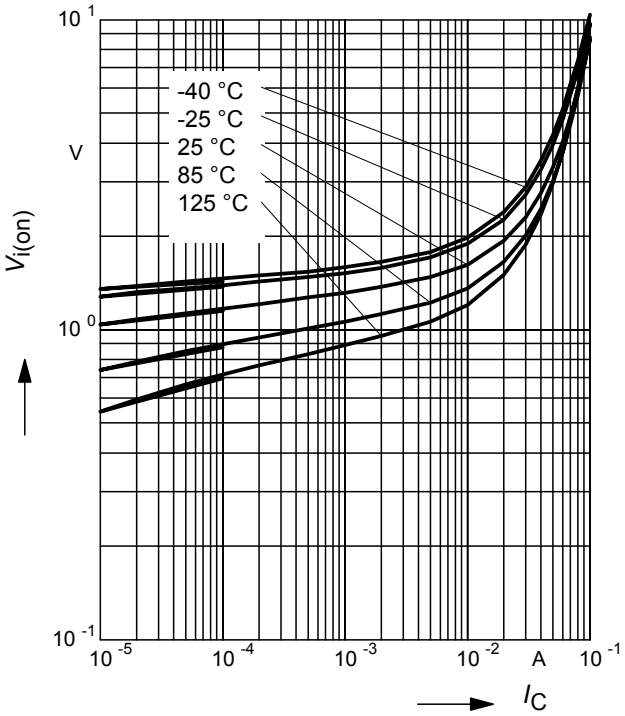
Collector-emitter saturation voltage

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



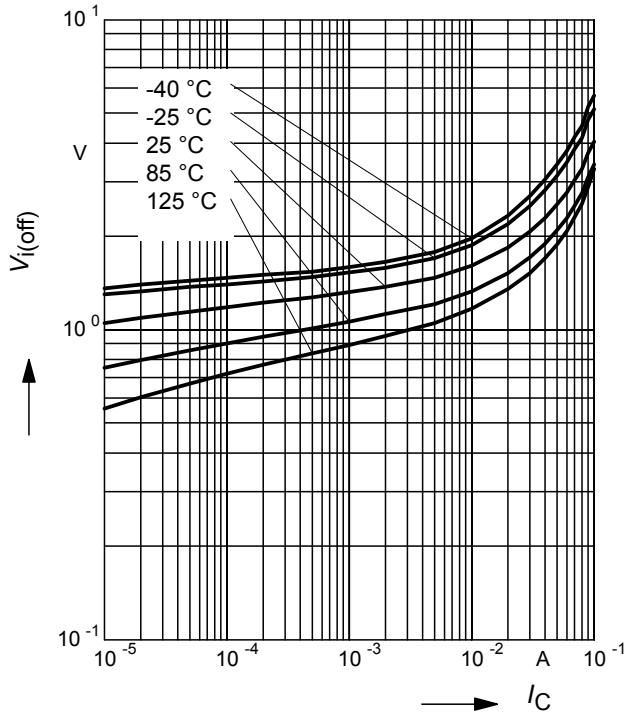
Input on Voltage $V_{i(on)} = f(I_C)$

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

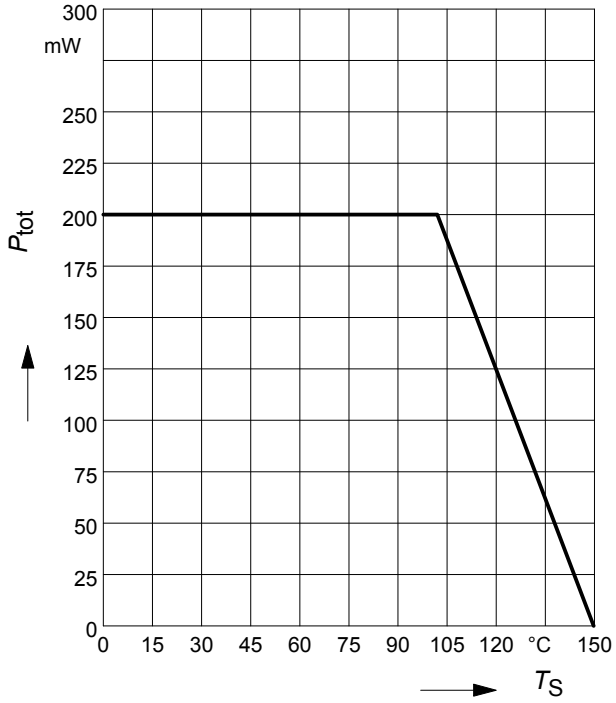


Input off voltage $V_{i(off)} = f(I_C)$

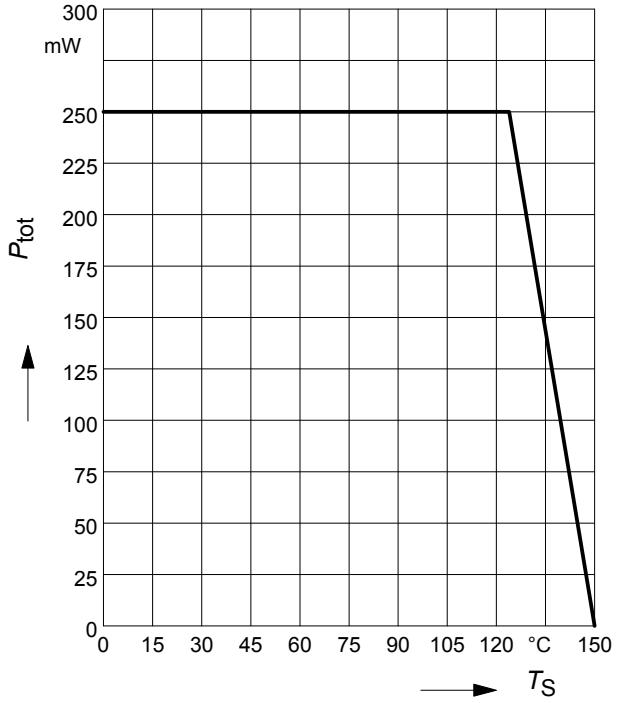
V_{CE} = 5V (common emitter configuration)



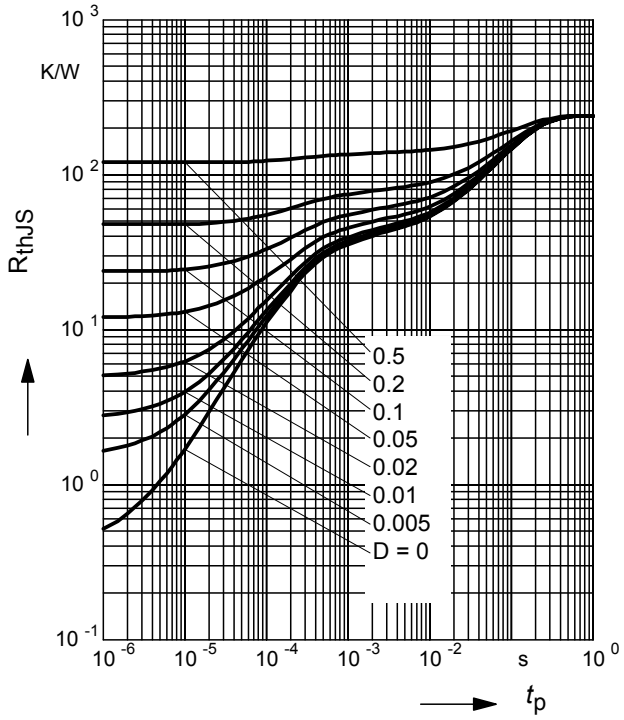
Total power dissipation $P_{tot} = f(T_S)$
BCR112



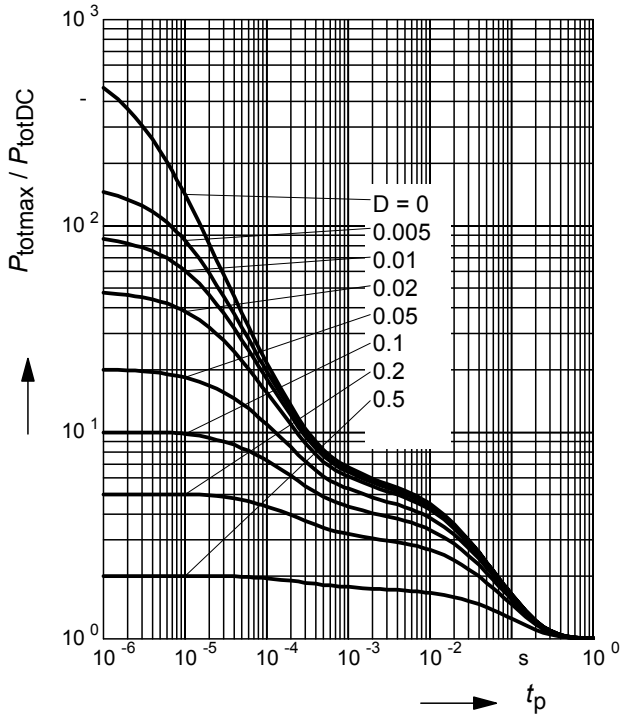
Total power dissipation $P_{tot} = f(T_S)$
BCR112W



Permissible Pulse Load $R_{thJS} = f(t_p)$
BCR112

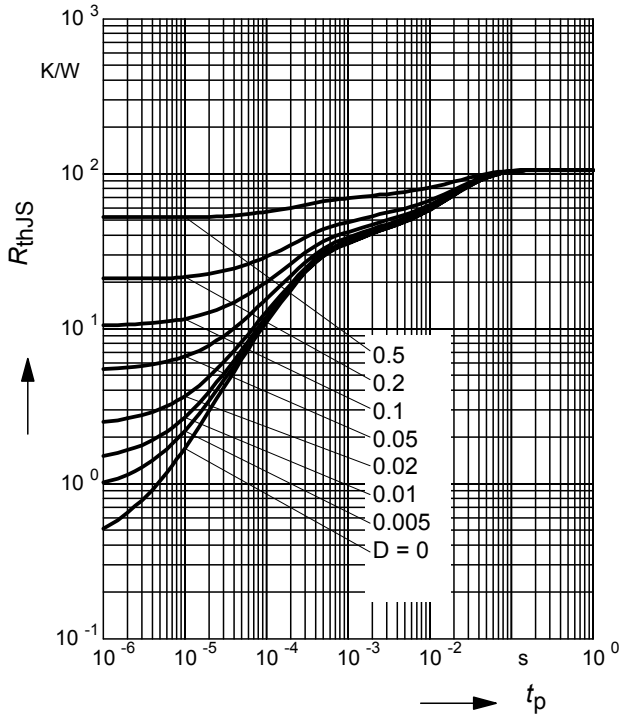


Permissible Pulse Load
$P_{totmax}/P_{totDC} = f(t_p)$
BCR112



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

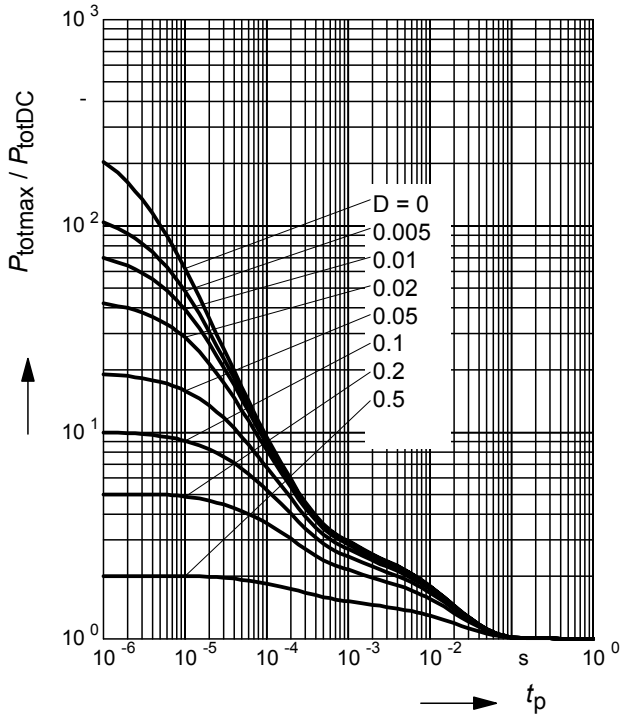
BCR112W



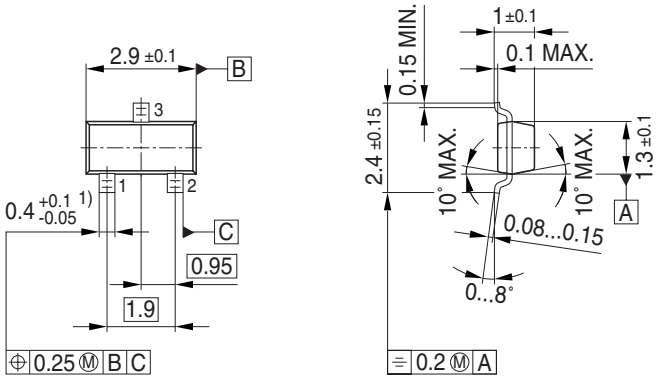
Permissible Pulse Load

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

BCR112W

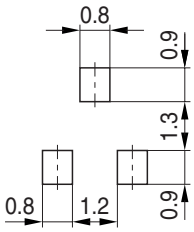


Package Outline

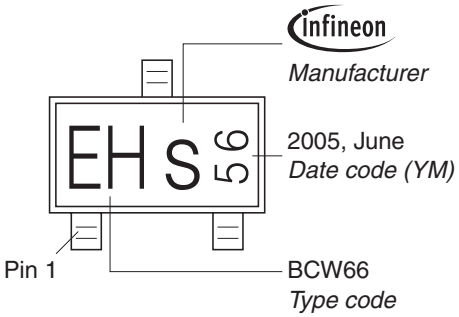


1) Lead width can be 0.6 max. in dambar area

Foot Print

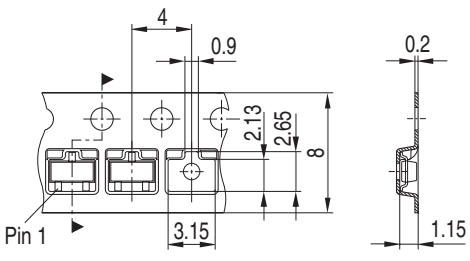


Marking Layout (Example)

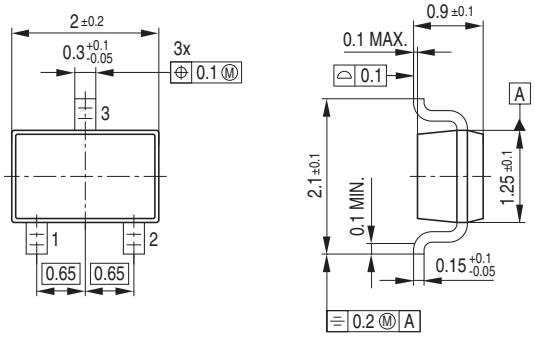


Standard Packing

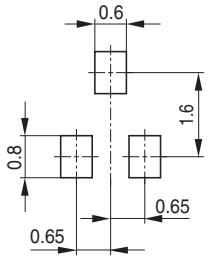
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



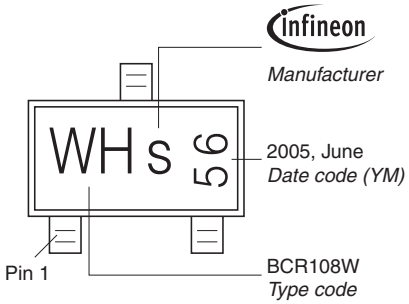
Package Outline



Foot Print

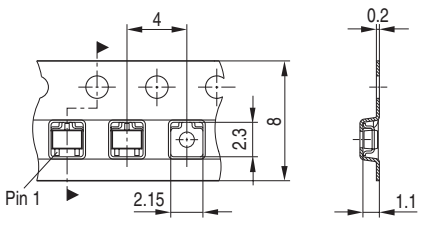


Marking Layout (Example)



Standard Packing

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



Edition 2009-11-16

Published by
Infineon Technologies AG
81726 Munich, Germany

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (<www.infineon.com>).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.
Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Bipolar Transistors - Pre-Biased ***category:***

Click to view products by Infineon ***manufacturer:***

Other Similar products are found below :

RN1607(TE85L,F) DTA124GKAT146 DTA144WETL DTA144WKAT146 DTC113EET1G DTC115TETL DTC115TKAT146 DTC124TETL DTC144ECA-TP DTC144VUAT106 MUN5241T1G NSBA114TDP6T5G NSBA143ZF3T5G NSBC114YF3T5G NSBC123TF3T5G SMUN5235T1G SMUN5330DW1T1G SSVMUN5312DW1T2G RN1303(TE85L,F) RN4605(TE85L,F) TTEPROTOTYPE79 DDTC114EUAQ-7-F EMH15T2R SMUN2214T3G NSBC114TF3T5G NSBC143ZPDP6T5G NSVMUN5113DW1T3G SMUN5230DW1T1G SMUN5133T1G SMUN2214T1G DTC114EUA-TP NSBA144EF3T5G NSVDTA114EET1G 2SC2223-T1B-A 2SC3912-TB-E SMUN5237DW1T1G SMUN5213DW1T1G SMUN5114DW1T1G SMUN2111T1G NSVDTC144EM3T5G DTC124ECA-TP DTC123TM3T5G DTA114ECA-TP DTA113EM3T5G DCX115EK-7-F DTC113EM3T5G NSVMUN5135DW1T1G NSVDTC143ZM3T5G SMUN5216DW1T1G NSVMUN5312DW1T2G