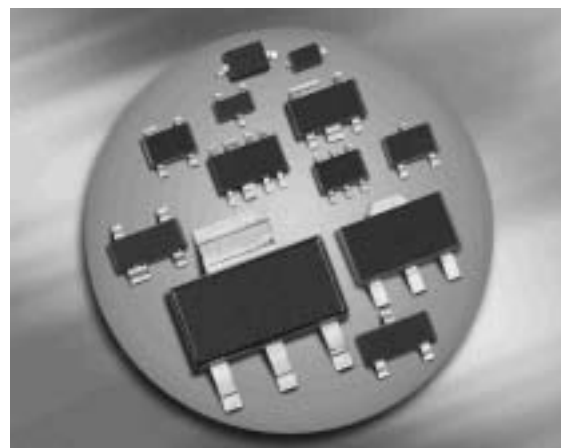


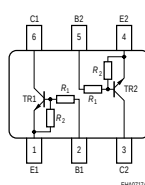
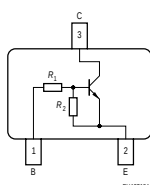
NPN Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in bias resistor ($R_1=2.2\text{ k}\Omega$, $R_2=47\text{ k}\Omega$)
- BCR108S: Two internally isolated transistors with good matching in one multichip package
- BCR108S: For orientation in reel see package information below
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BCR108/F
BCR108T/W

BCR108S



Type	Marking	Pin Configuration						Package
BCR108	WHs	1=B	2=E	3=C	-	-	-	SOT23
BCR108F	WHs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR108S	WHs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SOT363
BCR108W	WHs	1=B	2=E	3=C	-	-	-	SOT323

¹Pb-containing package may be available upon special request

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	20	
Input reverse voltage	$V_{i(rev)}$	5	
Collector current	I_C	100	mA
Total power dissipation- BCR108, $T_S \leq 102^\circ\text{C}$ BCR108F, $T_S \leq 128^\circ\text{C}$ BCR108S, $T_S \leq 115^\circ\text{C}$ BCR108W, $T_S \leq 124^\circ\text{C}$	P_{tot}	200 250 250 250	mW
Junction temperature	T_j	150	
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾ BCR108 BCR108F BCR108S BCR108W	R_{thJS}	≤ 240 ≤ 90 ≤ 140 ≤ 105	K/W

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

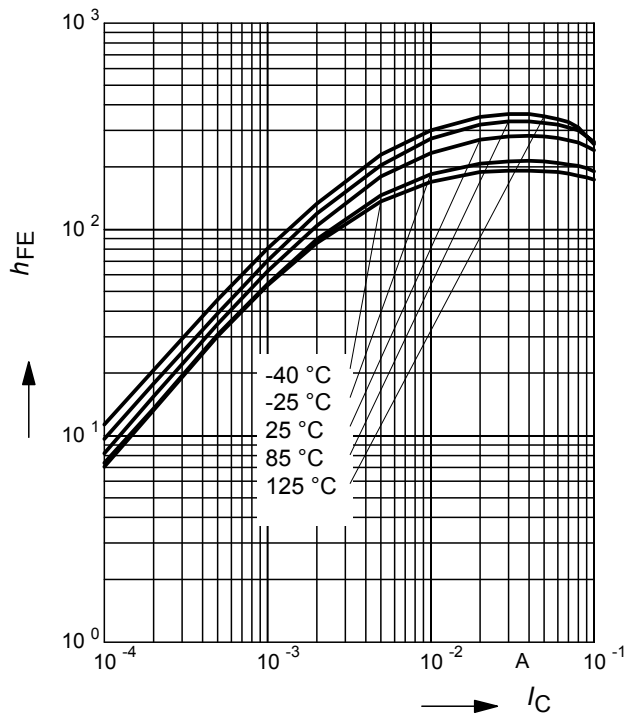
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 100\ \mu\text{A}$, $I_B = 0$	$V_{(\text{BR})\text{CEO}}$	50	-	-	V
Collector-base breakdown voltage $I_C = 10\ \mu\text{A}$, $I_E = 0$	$V_{(\text{BR})\text{CBO}}$	50	-	-	
Collector-base cutoff current $V_{\text{CB}} = 40\ \text{V}$, $I_E = 0$	I_{CBO}	-	-	100	nA
Emitter-base cutoff current $V_{\text{EB}} = 5\ \text{V}$, $I_C = 0$	I_{EBO}	-	-	164	μA
DC current gain ¹⁾ $I_C = 5\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$	h_{FE}	70	-	-	-
Collector-emitter saturation voltage ¹⁾ $I_C = 10\ \text{mA}$, $I_B = 0.5\ \text{mA}$	V_{CEsat}	-	-	0.3	V
Input off voltage $I_C = 100\ \mu\text{A}$, $V_{\text{CE}} = 5\ \text{V}$	$V_{\text{i(off)}}$	0.4	-	0.8	
Input on voltage $I_C = 2\ \text{mA}$, $V_{\text{CE}} = 0.3\ \text{V}$	$V_{\text{i(on)}}$	0.5	-	1.1	
Input resistor	R_1	1.5	2.2	2.9	k Ω
Resistor ratio	R_1/R_2	0.042	0.047	0.052	-
AC Characteristics					
Transition frequency $I_C = 10\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$, $f = 1\ \text{MHz}$	f_{T}	-	170	-	MHz
Collector-base capacitance $V_{\text{CB}} = 10\ \text{V}$, $f = 1\ \text{MHz}$	C_{cb}	-	2	-	pF

¹⁾Pulse test: $t < 300\ \mu\text{s}$; $D < 2\%$

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

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

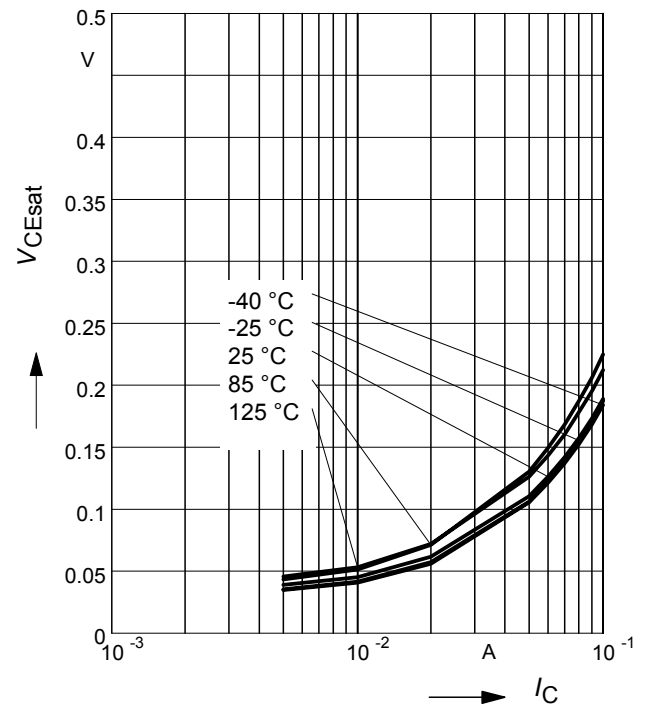
$T_A = \text{Parameter}$



Collector-emitter saturation voltage

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

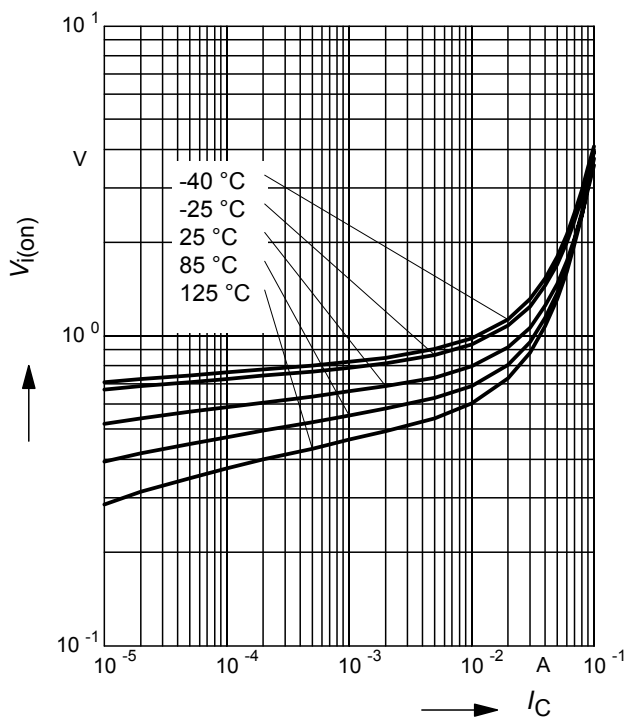
$T_A = \text{Parameter}$



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

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

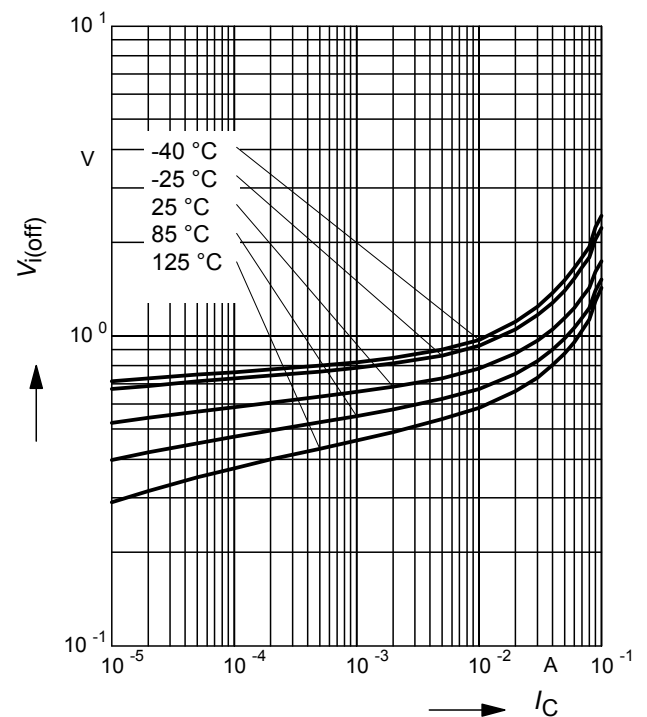
$T_A = \text{Parameter}$



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

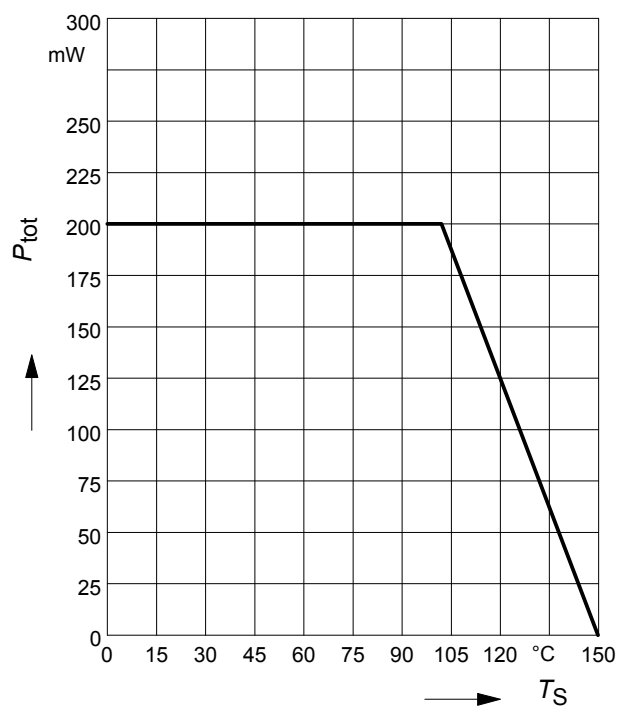
$V_{CE} = 5V$ (common emitter configuration)

$T_A = \text{Parameter}$



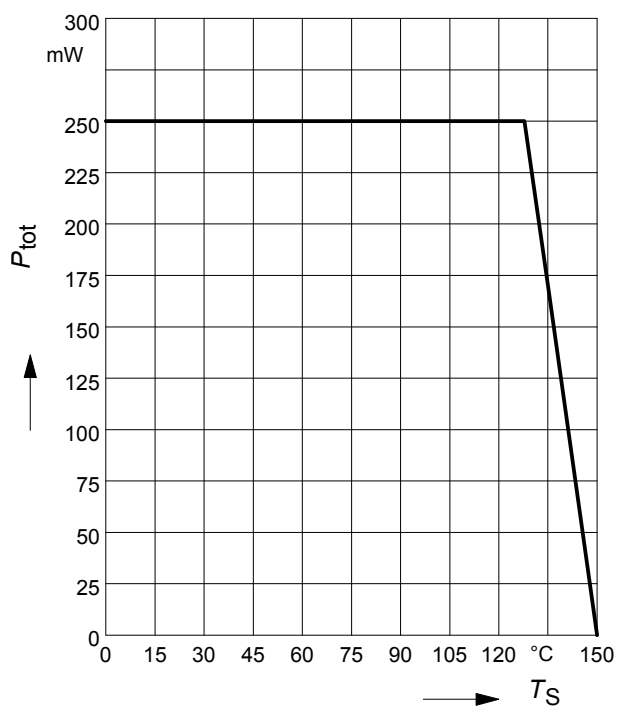
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR108



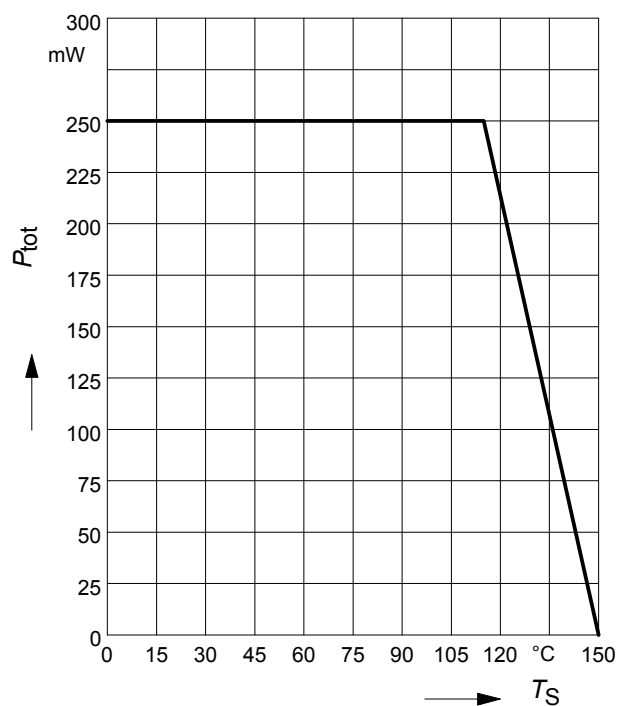
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR108F



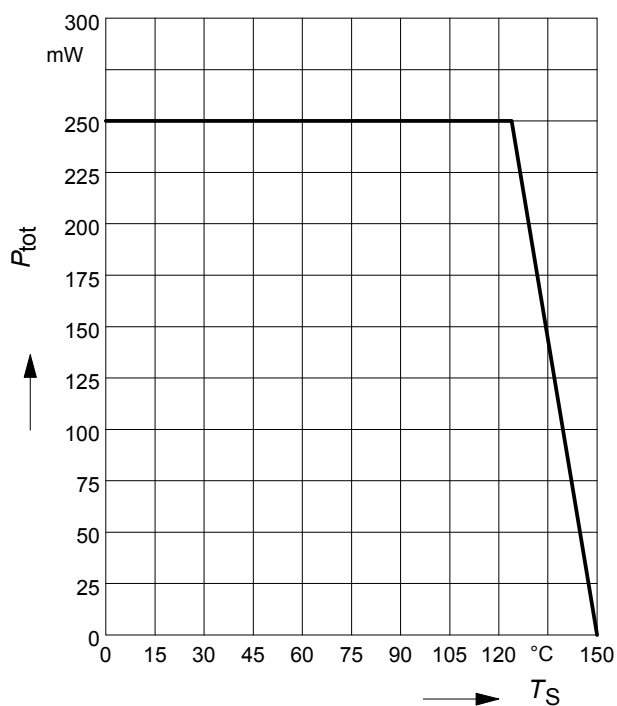
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR108S



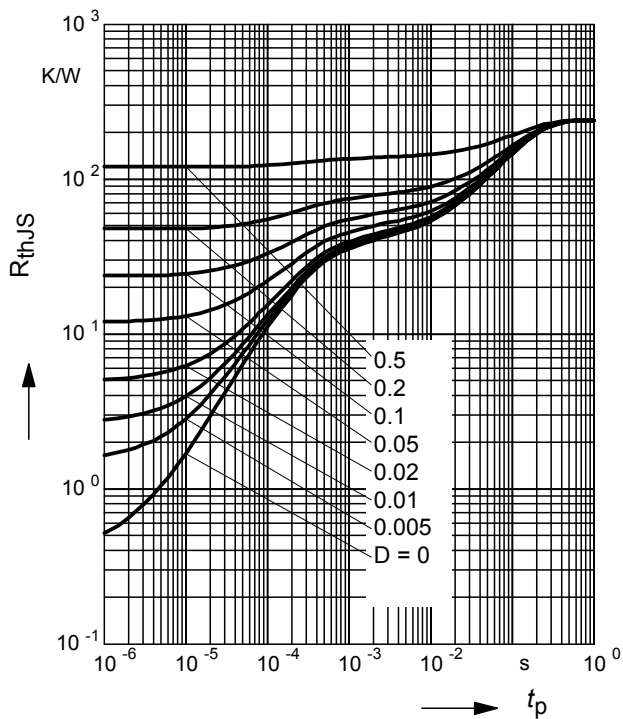
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR108W



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

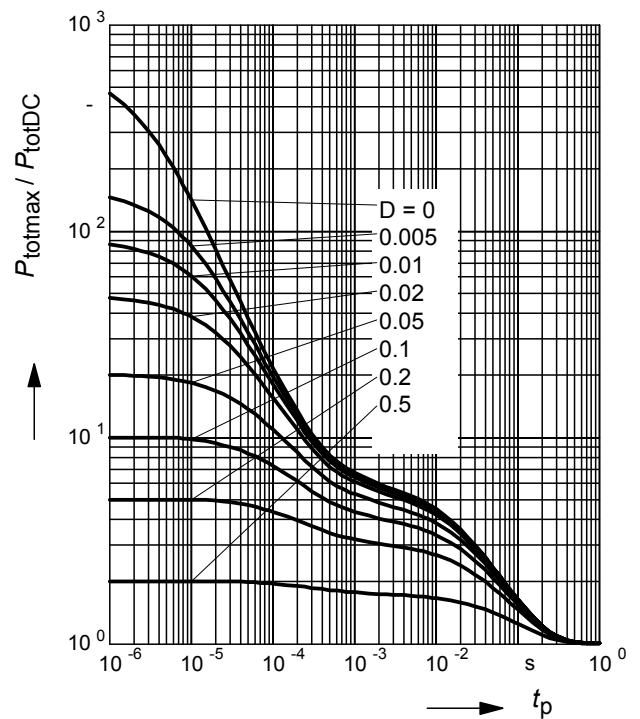
BCR108



Permissible Pulse Load

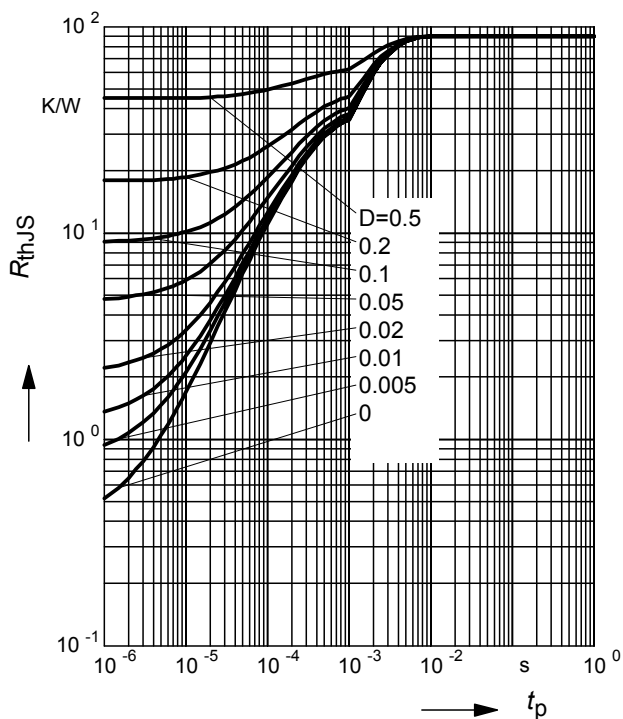
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR108



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

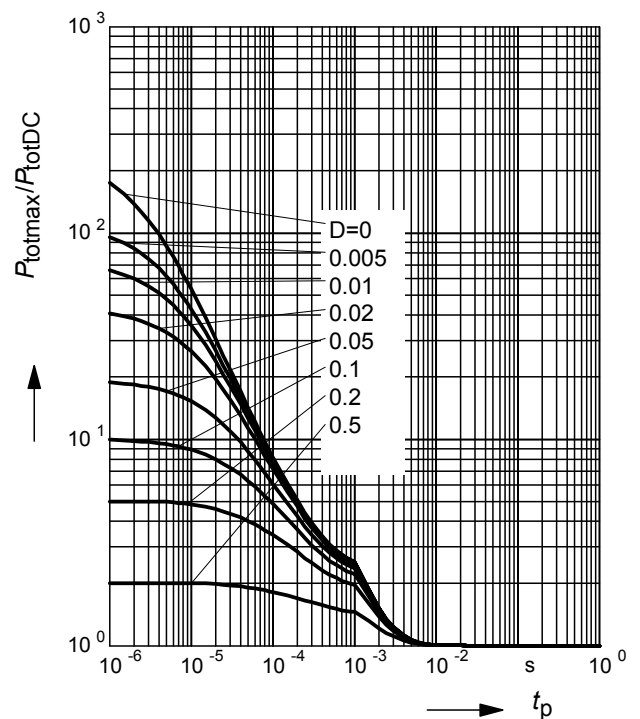
BCR108F



Permissible Pulse Load

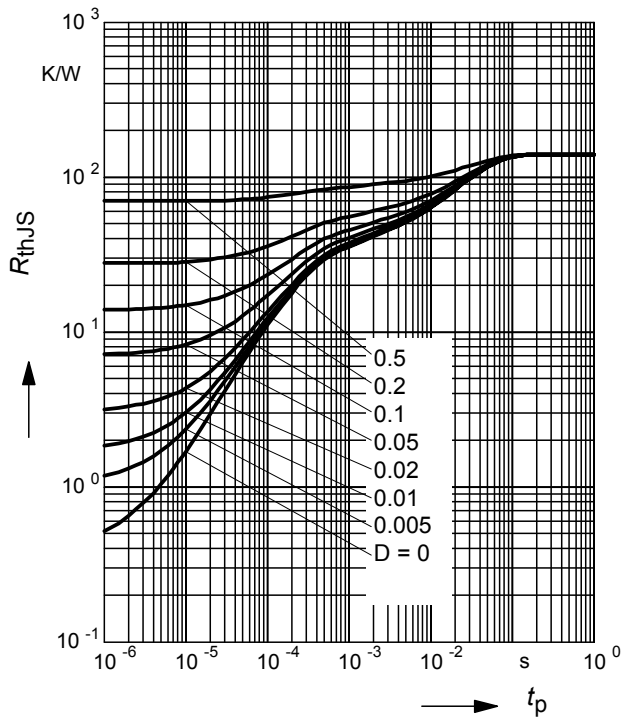
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR108F



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

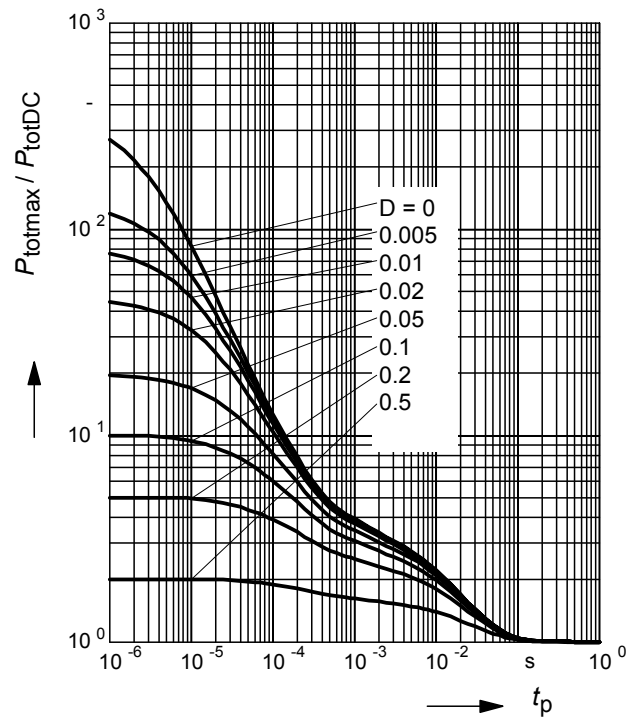
BCR108S



Permissible Pulse Load

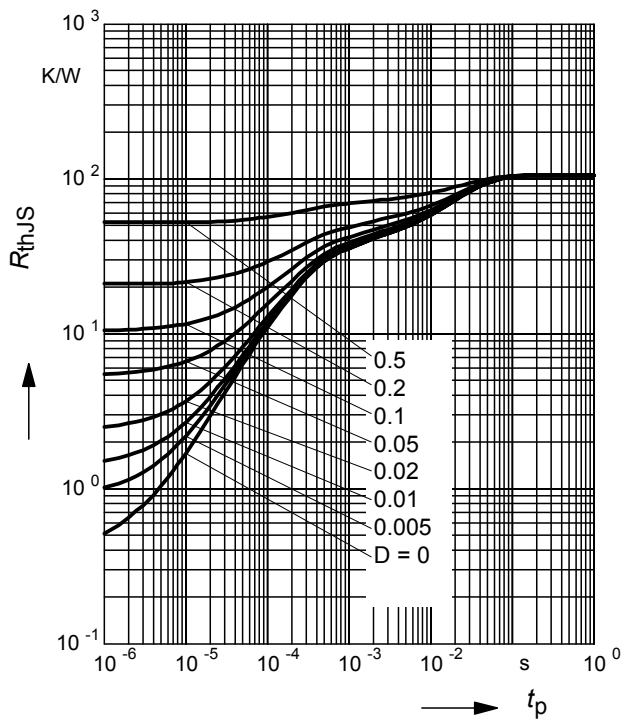
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR108S



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

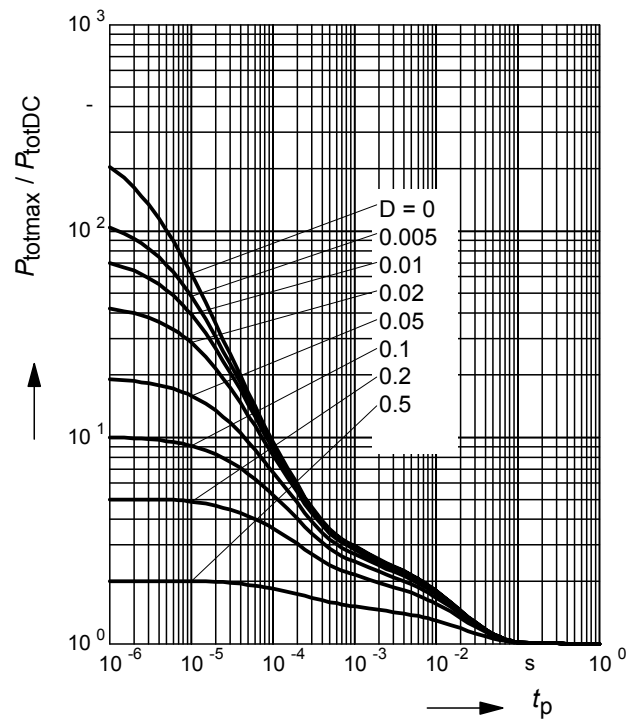
BCR108W



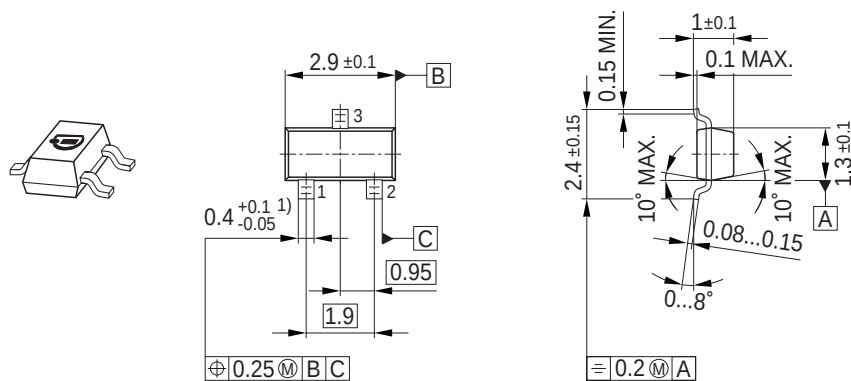
Permissible Pulse Load

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

BCR108W

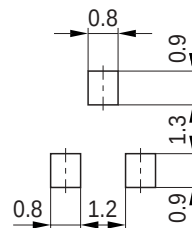


Package Outline

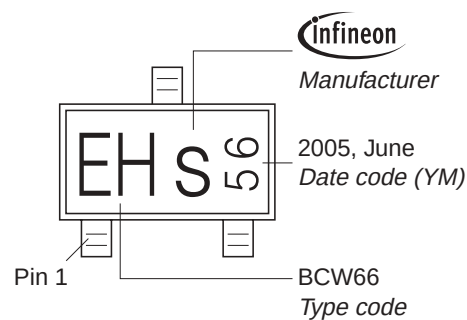


1) Lead width can be 0.6 max. in dambar area

Foot Print

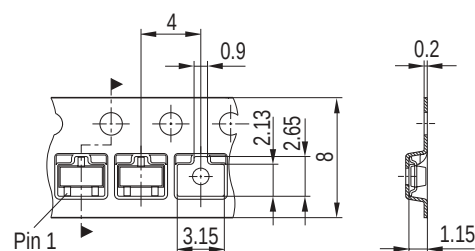


Marking Layout (Example)

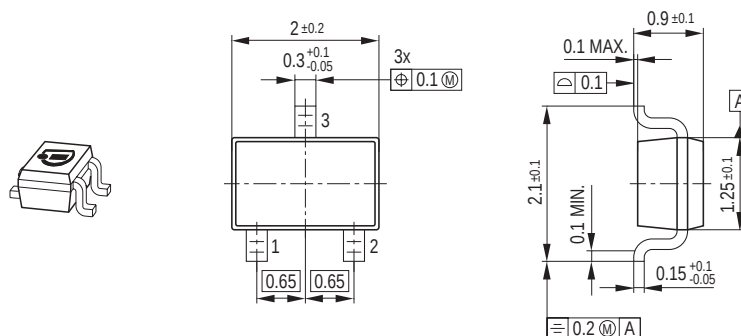


Standard Packing

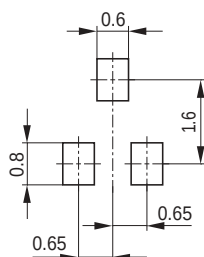
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



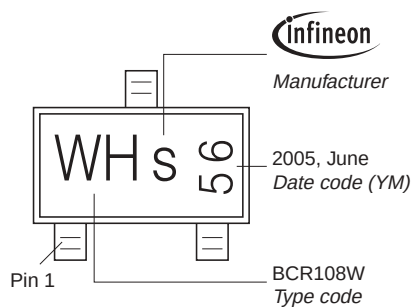
Package Outline



Foot Print

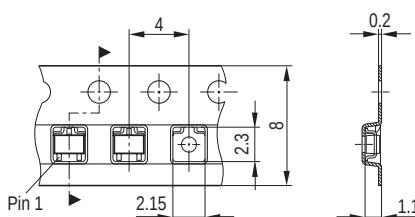


Marking Layout (Example)

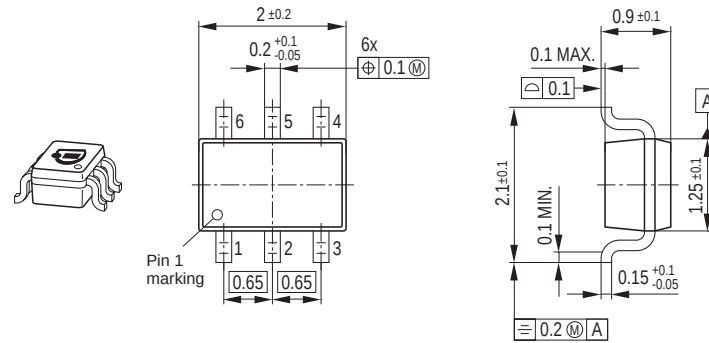


Standard Packing

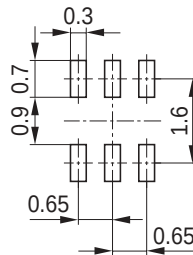
Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
 Reel $\varnothing 330$ mm = 10.000 Pieces/Reel



Package Outline

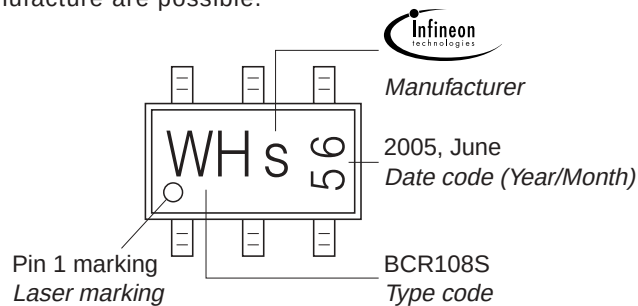


Foot Print



Marking Layout (Example)

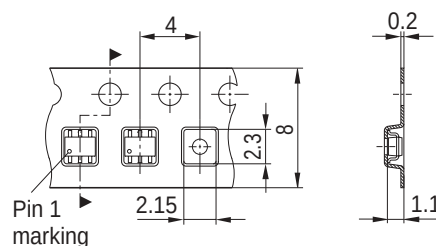
Small variations in positioning of
Date code, Type code and Manufacture are possible.



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.



[illegible]

Technical drawing of a mechanical part showing dimensions: 0.4, 0.45, 1.05, and 0.4.

1F S

Pin 1

BCR847BF

Pin 1

Pin 2

Pin 3

Pin 4

Pin 5

Pin 6

Pin 7

Pin 8

Pin 9

Pin 10

Pin 11

Pin 12

Pin 13

Pin 14

Pin 15

Pin 16

Pin 17

Pin 18

Pin 19

Pin 20

Pin 21

Pin 22

Pin 23

Pin 24

Pin 25

Pin 26

Pin 27

Pin 28

Pin 29

Pin 30

Pin 31

Pin 32

Pin 33

Pin 34

Pin 35

Pin 36

Pin 37

Pin 38

Pin 39

Pin 40

Pin 41

Pin 42

Pin 43

Pin 44

Pin 45

Pin 46

Pin 47

Pin 48

Pin 49

Pin 50

Pin 51

Pin 52

Pin 53

Pin 54

Pin 55

Pin 56

Pin 57

Pin 58

Pin 59

Pin 60

Pin 61

Pin 62

Pin 63

Pin 64

Pin 65

Pin 66

Pin 67

Pin 68

Pin 69

Pin 70

Pin 71

Pin 72

Pin 73

Pin 74

Pin 75

Pin 76

Pin 77

Pin 78

Pin 79

Pin 80

Pin 81

Pin 82

Pin 83

Pin 84

Pin 85

Pin 86

Pin 87

Pin 88

Pin 89

Pin 90

Pin 91

Pin 92

Pin 93

Pin 94

Pin 95

Pin 96

Pin 97

Pin 98

Pin 99

Pin 100

Pin 101

Pin 102

Pin 103

Pin 104

Pin 105

Pin 106

Pin 107

Pin 108

Pin 109

Pin 110

Pin 111

Pin 112

Pin 113

Pin 114

Pin 115

Pin 116

Pin 117

Pin 118

Pin 119

Pin 120

Pin 121

Pin 122

Pin 123

Pin 124

Pin 125

Pin 126

Pin 127

Pin 128

Pin 129

Pin 130

Pin 131

Pin 132

Pin 133

Pin 134

Pin 135

Pin 136

Pin 137

Pin 138

Pin 139

Pin 140

Pin 141

Pin 142

Pin 143

Pin 144

Pin 145

Pin 146

Pin 147

Pin 148

Pin 149

Pin 150

Pin 151

Pin 152

Pin 153

Pin 154

Pin 155

Pin 156

Pin 157

Pin 158

Pin 159

Pin 160

Pin 161

Pin 162

Pin 163

Pin 164

Pin 165

Pin 166

Pin 167

Pin 168

Pin 169

Pin 170

Pin 171

Pin 172

Pin 173

Pin 174

Pin 175

Pin 176

Pin 177

Pin 178

Pin 179

Pin 180

Pin 181

Pin 182

Pin 183

Pin 184

Pin 185

Pin 186

Pin 187

Pin 188

Pin 189

Pin 190

Pin 191

Pin 192

Pin 193

Pin 194

Pin 195

Pin 196

Pin 197

Pin 198

Pin 199

Pin 200

Pin 201

Pin 202

Pin 203

Pin 204

Pin 205

Pin 206

Pin 207

Pin 208

Pin 209

Pin 210

Pin 211

Pin 212

Pin 213

Pin 214

Pin 215

Pin 216

Pin 217

Pin 218

Pin 219

Pin 220

Pin 221

Pin 222

Pin 223

Pin 224

Pin 225

Pin 226

Pin 227

Pin 228

Pin 229

Pin 230

Pin 231

Pin 232

Pin 233

Pin 234

Pin 235

Pin 236

Pin 237

Pin 238

Pin 239

Pin 240

Pin 241

Pin 242

Pin 243

Pin 244

Pin 245

Pin 246

Pin 247

Pin 248

Pin 249

Pin 250

Pin 251

Pin 252

Pin 253

Pin 254

Pin 255

Pin 256

Pin 257

Pin 258

Pin 259

Pin 260

Pin 261

Pin 262

Pin 263

Pin 264

Pin 265

Pin 266

Pin 267

Pin 268

Pin 269

Pin 270

Pin 271

Pin 272

Pin 273

Pin 274

Pin 275

Pin 276

Pin 277

Pin 278

Pin 279

Pin 280

Pin 281

Pin 282

Pin 283

Pin 284

Pin 285

Pin 286

Pin 287

Pin 288

Pin 289

Pin 290

Pin 291

Pin 292

Pin 293

Pin 294

Pin 295

Pin 296

Pin 297

Pin 298

Pin 299

Pin 300

Pin 301

Pin 302

Pin 303

Pin 304

Pin 305

Pin 306

Pin 307

Pin 308

Pin 309

Pin 310

Pin 311

Pin 312

Pin 313

Pin 314

Pin 315

Pin 316

Pin 317

Pin 318

Pin 319

Pin 320

Pin 321

Pin 322

Pin 323

Pin 324

Pin 325

Pin 326

Pin 327

Pin 328

Pin 329

Pin 330

Pin 331

Pin 332

Pin 333

Pin 334

Pin 335

Pin 336

Pin 337

Pin 338

Pin 339

Pin 340

Pin 341

Pin 342

Pin 343

Pin 344

Pin 345

Pin 346

Pin 347

Pin 348

Pin 349

Pin 350

Pin 351

Pin 352

Pin 353

Pin 354

Pin 355

Pin 356

Pin 357

Pin 358

Pin 359

Pin 360

Pin 361

Pin 362

Pin 363

Pin 364

Pin 365

Pin 366

Pin 367

Pin 368

Pin 369

Pin

Technical drawing of a mechanical part. The main view shows a component with a total width of 4 and a total height of 8. There are three circular features: a central hole with a diameter of 1.2, and two side holes with diameters of 1.35 and 1.5. A vertical slot with a width of 0.3 is located on the right side. A section view on the right shows a cross-section with a width of 0.2 and a height of 0.7. A label 'Pin 1' points to a feature on the left side.

Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

© Infineon Technologies AG 2007.

All Rights Reserved.

Attention please!

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). 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 your 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 your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems 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.



ООО «НИОКРсистемс» - это оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов. Реализуемая нашей компанией продукция насчитывает более полумиллиона наименований.

Благодаря этому наша компания предлагает к поставке практически не ограниченный ассортимент компонентов как оптовыми, мелкооптовыми партиями, так и в розницу.

Благодаря развитой сети поставщиков, помогаем в поиске и приобретении экзотичных или снятых с производства компонентов.

Наша компания это:

- Гарантия качества поставляемой продукции
- Широкий ассортимент
- Минимальные сроки поставок
- Техническая поддержка
- Подбор комплектации
- Индивидуальный подход
- Гибкое ценообразование
- Работаем по 275 ФЗ