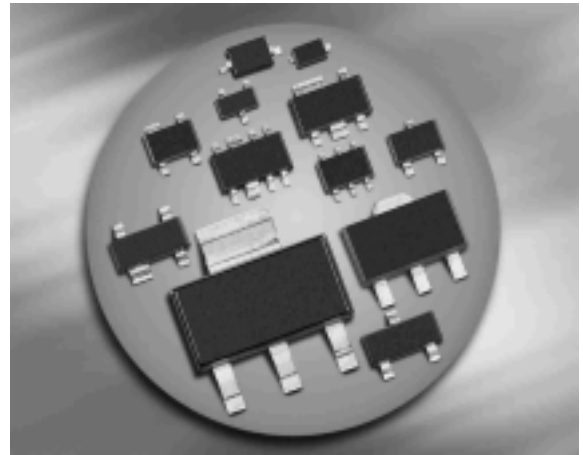
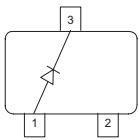
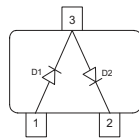
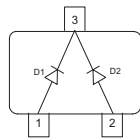
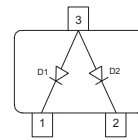


Silicon Schottky Diodes

- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Guard ring protected
- Low forward voltage
- Improved operating temperature range due to extra-low thermal resistance (see attached Forward current curves)
- High volume packing size:
B5000: 9 x 10k reels, B5003: 10 x 3k reels
- Not for automotive applications*


BAT54

BAT54-04

BAT54-05

BAT54-06


Type	Package	Configuration	L_S (nH)	Marking
BAT54	SOT23	single	1.8	T
BAT54-04	SOT23	series	1.8	TS
BAT54-05	SOT23	common cathode	1.8	TC
BAT54-06	SOT23	common anode	1.8	TA

* Automotive qualification ongoing

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Forward current	I_F	200	mA
Non-repetitive peak surge forward current ($t \leq 10$ ms)	I_{FSM}	600	
Repetitive peak forward current ¹⁾ $t_p \leq 1$ s, $\delta = 0.5$	I_{FRM}	300	mA
Total power dissipation BAT54, $T_S \leq 127^\circ\text{C}$ BAT54-04, -06, $T_S \leq 120^\circ\text{C}$ BAT54-05, $T_S \leq 114^\circ\text{C}$	P_{tot}	230 230 230	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ²⁾ BAT54 BAT54-04, -06 BAT54-05	R_{thJS}	≤ 100 ≤ 130 ≤ 155	K/W

¹Device mounted on epoxy PCB 40 x 40 x 1.5 mm / 6 cm² Cu

²For calculation of R_{thJA} please refer to Application Note Thermal Resistance

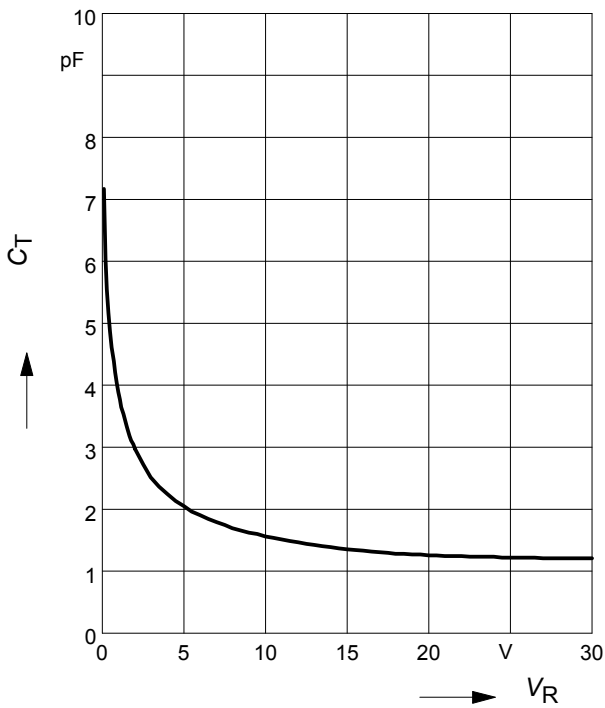
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage ¹⁾ $I_{(BR)} = 10 \mu\text{A}$	$V_{(BR)}$	30	-	-	V
Reverse current ¹⁾ $V_R = 25 \text{ V}$	I_R	-	-	2	μA
Forward voltage ¹⁾ $I_F = 0.1 \text{ mA}$ $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 30 \text{ mA}$ $I_F = 100 \text{ mA}$	V_F	-	-	240 320 400 500 800	mV
AC Characteristics					
Diode capacitance $V_R = 1 \text{ V}, f = 1 \text{ MHz}$	C_T	-	-	10	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, \text{measured } I_R = 1 \text{ mA},$ $R_L = 100 \Omega$	t_{rr}	-	-	5	ns

¹⁾Pulsed test $t_p = 300 \mu\text{s}, D = 0.01$

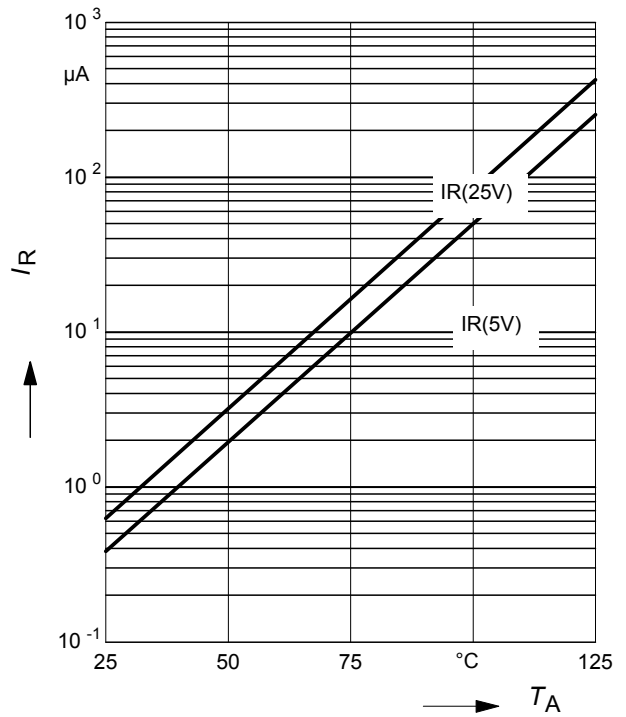
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



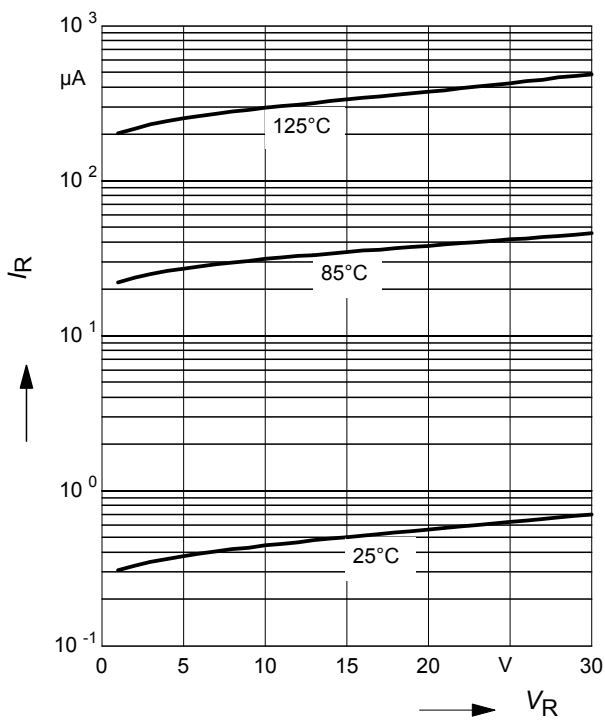
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



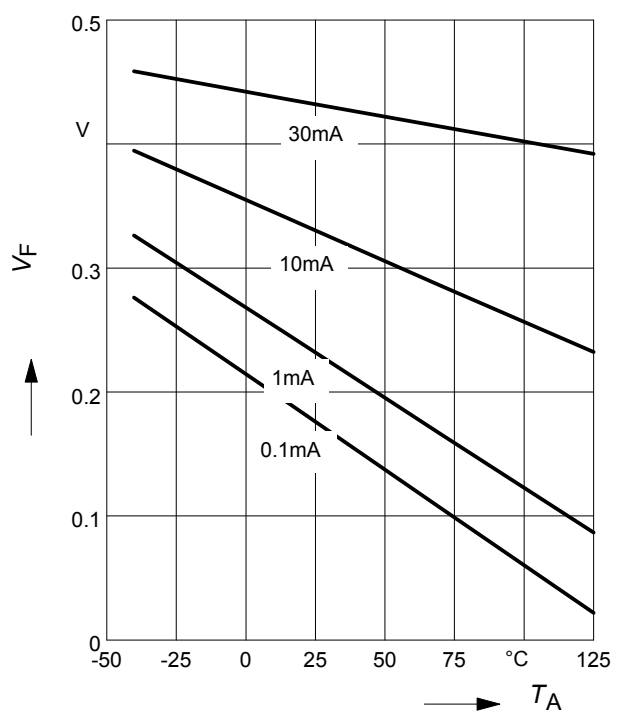
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$

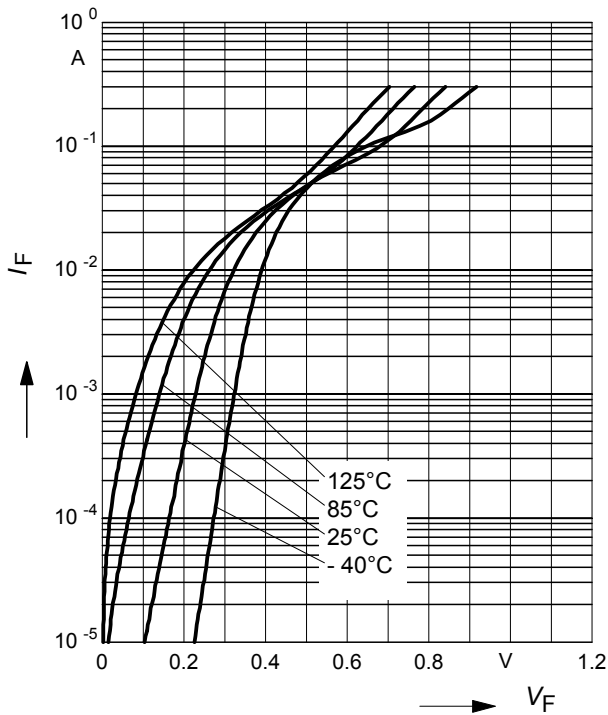


Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



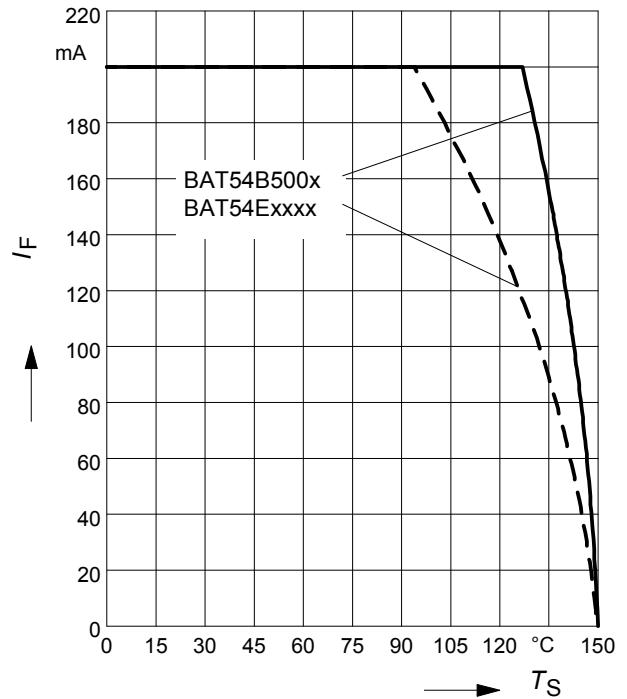
Forward current $I_F = f(V_F)$



Forward current $I_F = f(T_S)$

BAT54B500x

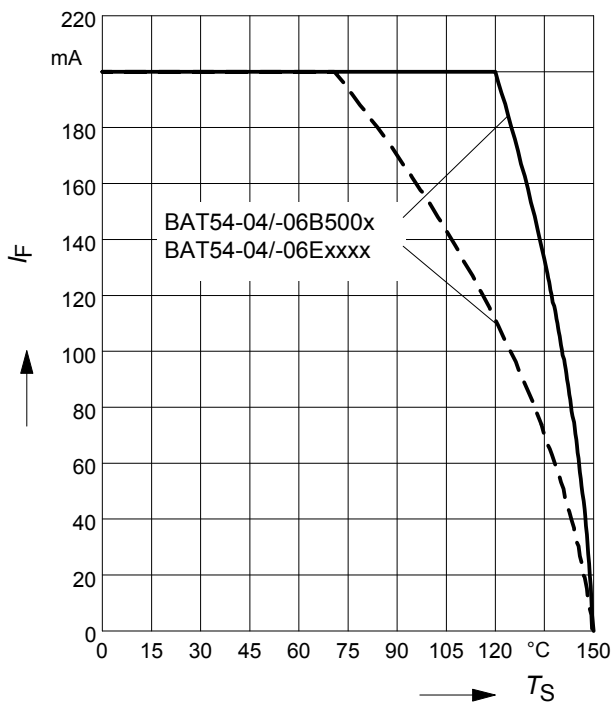
BAT54Exxxx (e.g. E6327)



Forward current $I_F = f(T_S)$

BAT54-04/-06B500x

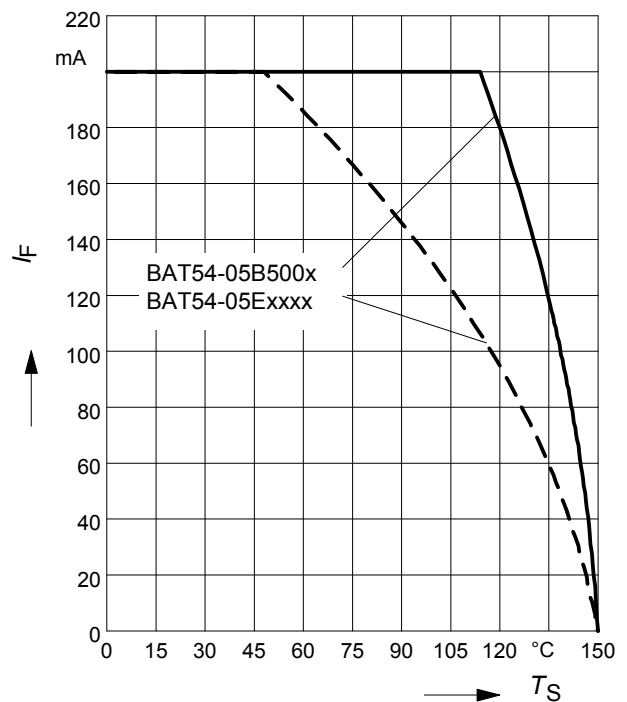
BAT54-04/-06Exxxx (e.g. E6327)



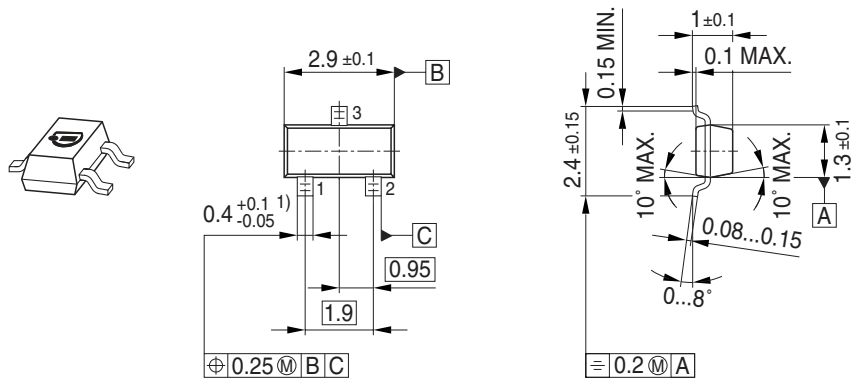
Forward current $I_F = f(T_S)$

BAT54-05B500x

BAT54-05Exxxx (e.g. E6327)

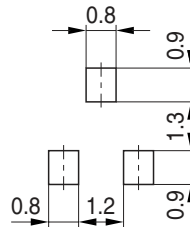


Package Outline

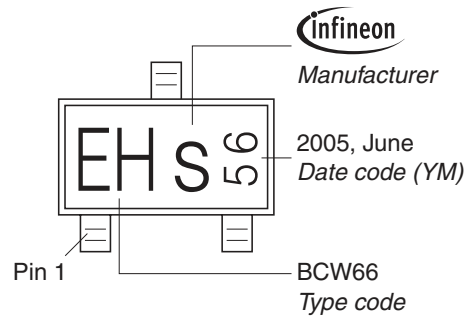


1) Lead width can be 0.6 max. in dambar area

Foot Print

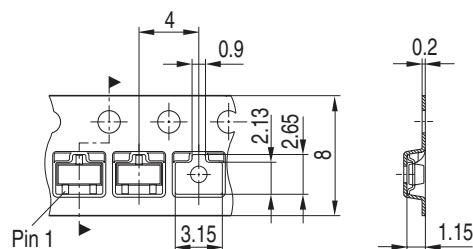


Marking Layout (Example)



Standard Packing

Reel ϕ 180 mm = 3.000 Pieces/Reel
 Reel ϕ 330 mm = 10.000 Pieces/Reel



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