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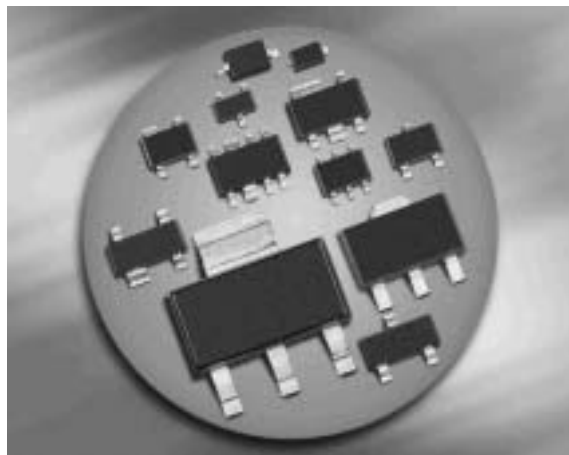
sales@integrated-circuit.com



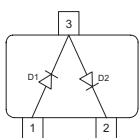
SMBD7000/MMBD7000...

Silicon Switching Diode Array

- For high-speed switching applications
- Pb-free (RoHS compliant) package ¹⁾
- Qualified according AEC Q101



SMBD7000/MMBD7000



Type	Package	Configuration	Marking
SMBD7000/MMBD7000	SOT23	series	s5C

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	100	V
Peak reverse voltage	V_{RM}	100	
Forward current	I_F	200	mA
Non-repetitive peak surge forward current	I_{FSM}		A
$t = 1 \mu\text{s}$		4.5	
$t = 1 \text{ s}$		0.5	
Total power dissipation	P_{tot}	330	mW
$T_S \leq 28^\circ\text{C}$			
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ²⁾	R_{thJS}	≤ 360	K/W
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¹⁾Pb-containing package may be available upon special request

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



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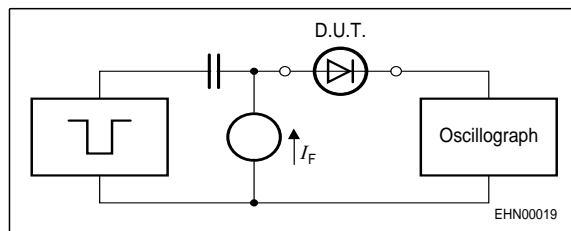
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 100 \mu A$	$V_{(BR)}$	100	-	-	V
Reverse current $V_R = 50 V$ $V_R = 100 V$ $V_R = 50 V, T_A = 150 ^\circ C$	I_R	- - -	- - -	0.3 0.5 100	μA
Forward voltage $I_F = 1 mA$ $I_F = 10 mA$ $I_F = 50 mA$ $I_F = 100 mA$ $I_F = 150 mA$	V_F	550 670 - 750 -	- - - - -	700 820 1000 1100 1250	mV

AC Characteristics

Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	C_T	-	-	2	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}$, measured at $I_R = 1 \text{ mA}$, $R_L = 100 \Omega$	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time



Pulse generator: $t_p = 100\text{ns}$, $D = 0.05$, $t_r = 0.6\text{ns}$,
 $R_i = 50\Omega$

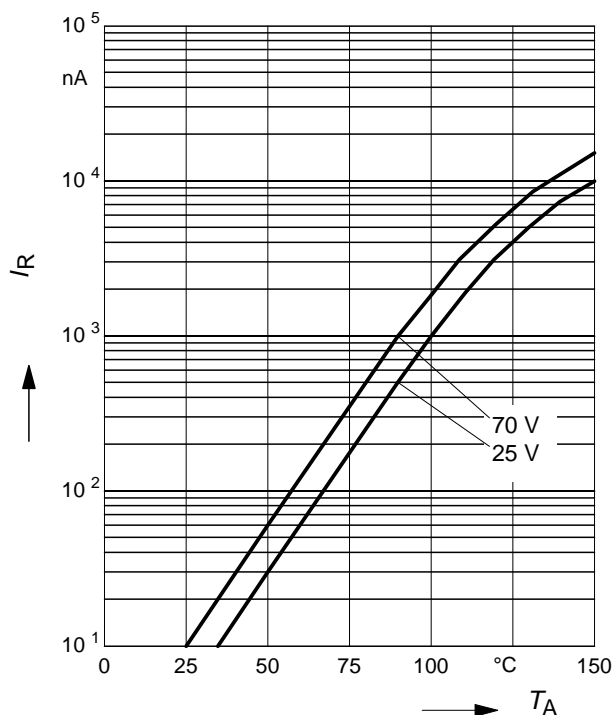
Oscilloscope: $R = 50\Omega$, $t_r = 0.35\text{ns}$, $C \leq 1\text{pF}$



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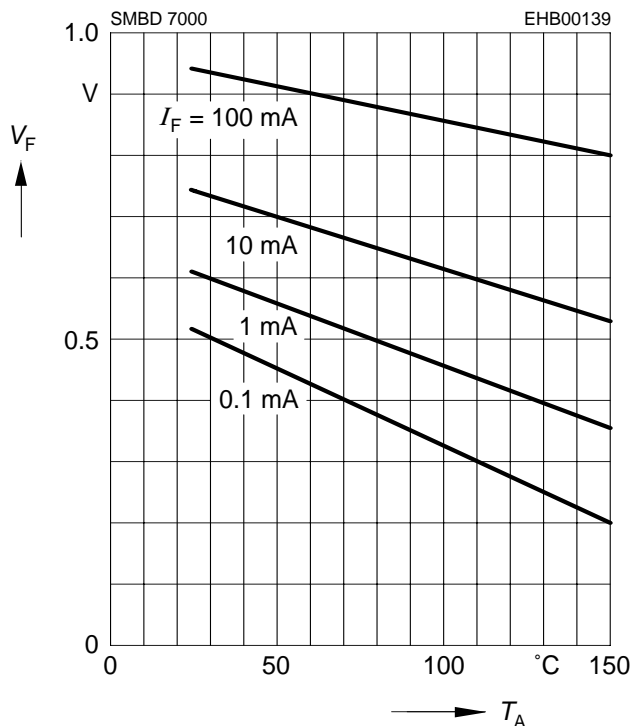
Reverse current $I_R = f(T_A)$

V_R = Parameter



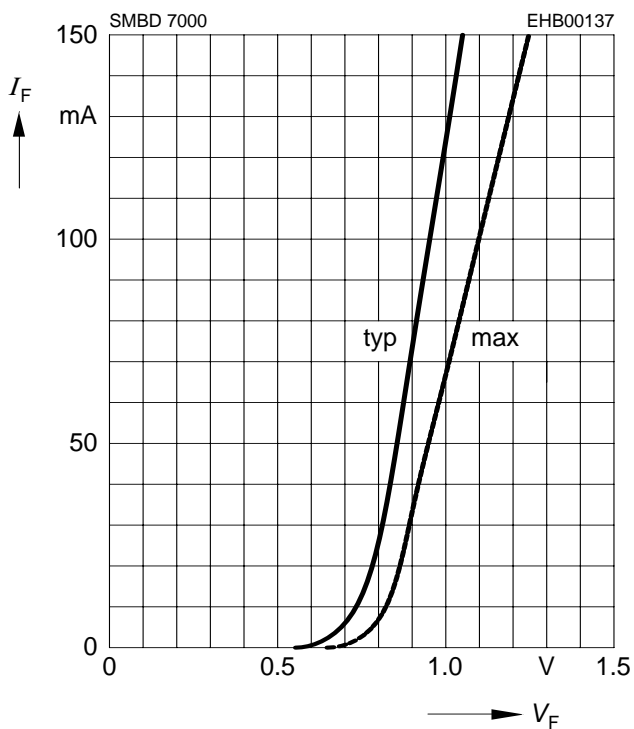
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



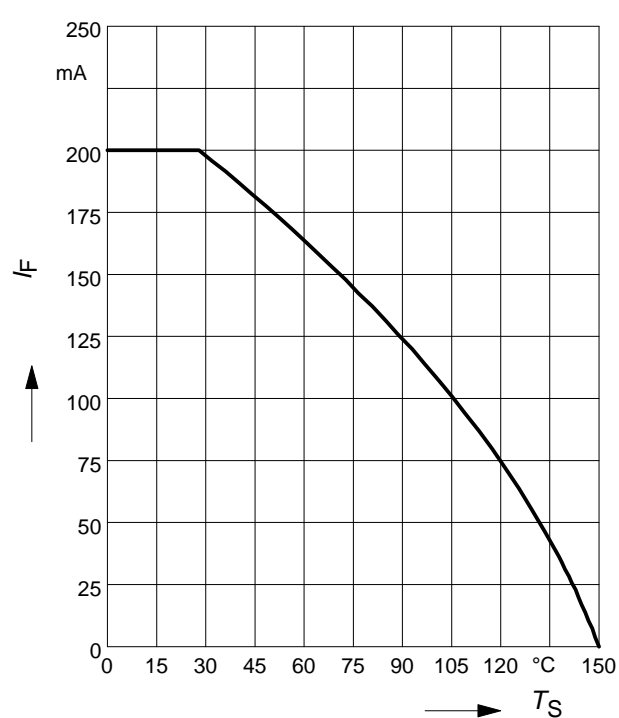
Forward current $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$



Forward current $I_F = f(T_S)$

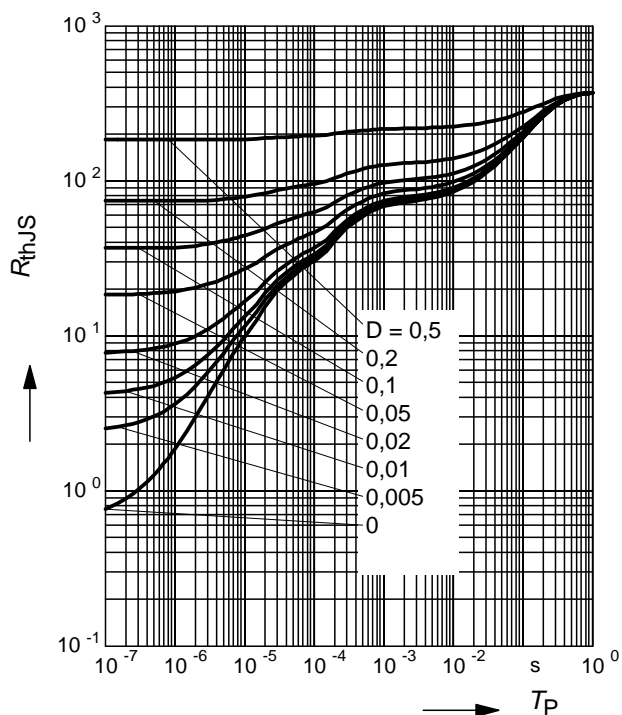
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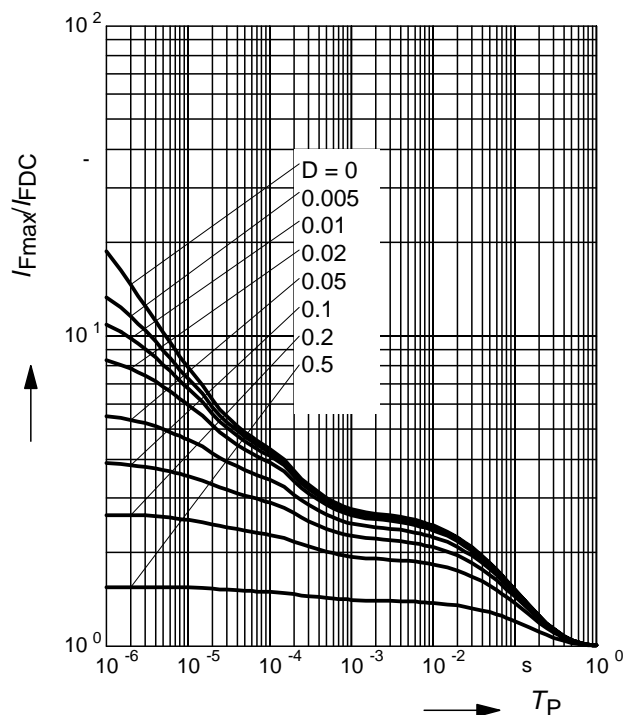
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Permissible Puls Load $R_{thJS} = f(t_p)$

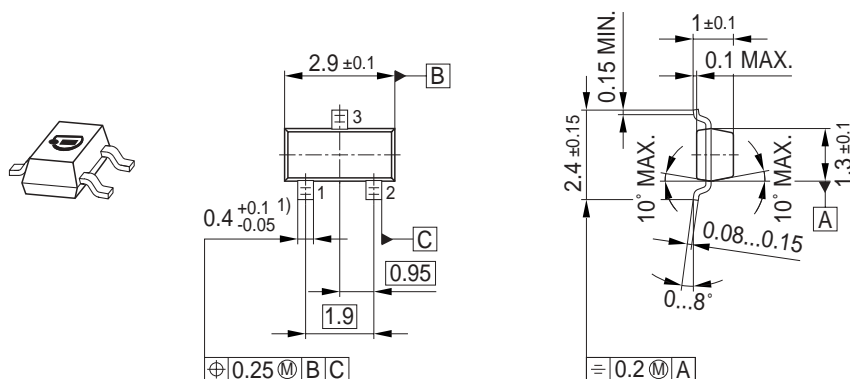


Permissible Pulse Load

$$I_{Fmax}/I_{FDC} = f(t_p)$$

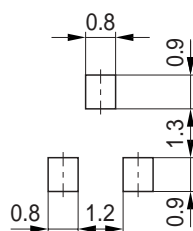


Package Outline

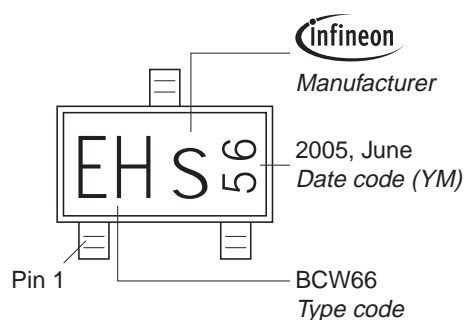


1) Lead width can be 0.6 max. in dambar area

Foot Print



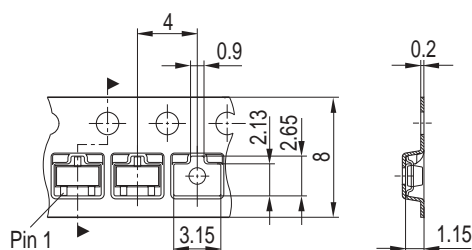
Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel

Reel ø330 mm = 10.000 Pieces/Reel



**SMBD7000/MMBD7000...**

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