Diotec Semiconductor

BAS16, BAW56, BAV70

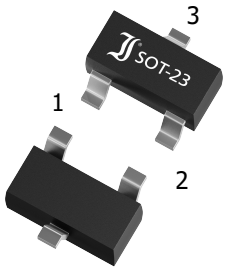
SMD Small Signal Diodes
SMD Kleinsignal-Dioden

I_{FAV} = 215 mA
V_{F1} < 715 mV
T_{jmax} = 150°C

V_{RRM} = 85, 100 V
I_{FSM} = 2 A
t_{rr1} < 4 ns

Version 2023-08-15

SOT-23
TO-236



SPICE Model & **STEP** File [1])

Marking Code
See below'XX' | Siehe unten 'XX'

HS Code 85411000

Typical Applications
Signal processing, Rectifying,
(High-speed) Switching
Suffix -C: Commercial grade [1])
No suffix: Industrial grade [1])
Suffix -Q: AEC-Q101 compliant [1])
Suffix -AQ: AEC-Q101 qualified [1])

Features
Very high switching speed
Compliant to RoHS (w/o exemp.),
REACH, Conflict Minerals [1])

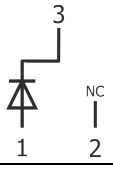
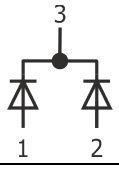
Typische Anwendungen
Signalverarbeitung, Gleichrichten,
(Schnelles) Schalten
Suffix -C: Standardausführung [1])
Kein Suffix: Industriequalität [1])
Suffix -Q: AEC-Q101 konform [1])
Suffix -AQ: AEC-Q101 qualifiziert [1])

Besonderheiten
Sehr schnelles Schalten
Konform zu RoHS (ohne Ausn.),
REACH, Konfliktmineralien [1])

Mechanical Data [1])

Taped and reeled	3000 / 7"	Gegurtet auf Rolle
Weight approx.	0.01 g	Gewicht ca.
Case material	UL 94V-0	Gehäusematerial
Solder & assembly conditions	260°C/10s MSL = 1	Löt- und Einbaubedingungen

Mechanische Daten [1])

BAS16/-AQ '5D'		Single Diode	**BAV70**/-C/-Q**/-AQ** 'A4'		Common Cathode
BAW56/-Q**/-AQ** 'A1'		Common Anode			

Maximum ratings [1]) **Grenzwerte [2])**

Power dissipation (per device) Verlustleistung (pro Bauteil)		P_{tot}	225 mW [2]) 350 mW [2])
Maximum average forward current Dauergrenzstrom	single diode loaded – eine Diode belastet both diodes loaded – beide Dioden belastet	I_{FAV}	215 mA [3]) 125 mA [3])
Repetitive peak forward current – Periodischer Spitzenstrom		I_{FRM}	300 mA [3])
Non repetitive peak forward surge current Stoßstrom-Grenzwert	$t_p \le 1$ s $t_p \le 1$ ms $t_p \le 1$ µs	I_{FSM}	0.5 A 1 A 2 A
Repetitive peak reverse voltage Periodische Spitzensperrspannung	BAV70-C BAS16/-AQ, BAW56/-Q BAV70/-Q	V_{RRM}	70 V 85 V 100 V
Reverse voltage – Sperrspannung	DC	V_R	70 V
Junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur		T_j T_S	-55...+150°C

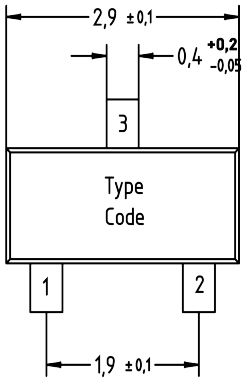
1 Please note the detailed information on our website or at the beginning of the data book
Bitte beachten Sie die detaillierten Hinweise auf unserer Internetseite bzw. am Anfang des Datenbuches
1 T_A = 25°C and per diode, unless otherwise specified – T_A = 25°C und pro Diode, wenn nicht anders angegeben
2 Mounted on 3 mm² copper pads per terminal – Montage auf 3 mm² Kupferbelag (Lötpads) je Anschluss

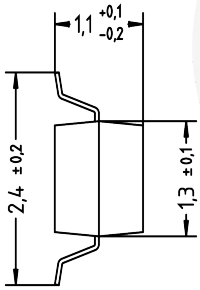
Characteristics **Kennwerte**

					BAS16/-AQ BAW56/-Q/-AQ	BAV70-C	BAV70/ -Q/-AQ
Forward voltage Durchlass-Spannung [1])	T_j = 25°C	I_F =	1 mA 10 mA 50 mA 150 mA	V_F	< 715 mV < 855 mV < 1.0 V < 1.25 V	< 715 mV < 855 mV < 1.0 V < 1.25 V	
Leakage current Sperrstrom [1])	T_j = 25°C	V_R =	20 V 25 V 70 V 75 V	I_R	– < 30 nA – < 1.0 µA	– – < 2.5 µA –	< 25 nA – < 2.5 µA
	T_j = 150°C	V_R =	25 V 70/75 V	I_R	< 30 µA < 50 µA	< 30 µA < 50 µA	
Junction capacitance Sperrschichtkapazität	V_R = 0 V, f = 1 MHz			C_T	< 2 pF	< 2 pF	
Reverse recovery time Sperrverzug	I_F = 10 mA über/through I_R = 10 mA bis/to I_R = 1 mA			t_{rr}	< 4 ns	< 6ns	< 4 ns
Typical thermal resistance junction to ambient Typischer Wärmewiderstand Sperrschicht-Umgebung				R_{thA}	357 K/W [2])	556 K/W[2])	357 K/W[2])

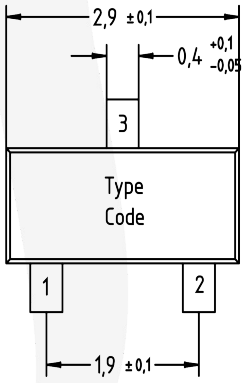
Dimensions - Maße [mm]

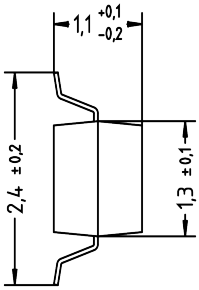
Commercial grade (-C)

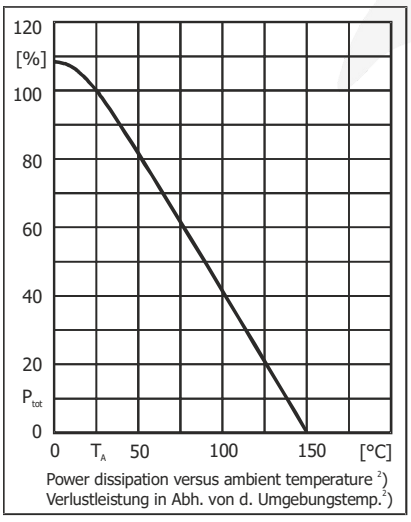




Industrial (ㄴㅓ) / AEC-Q101 grade (-Q / -AQ)

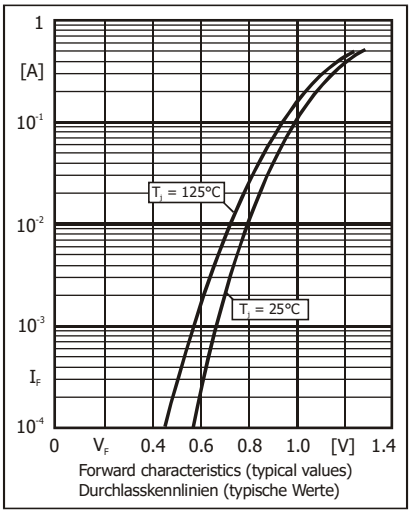






Power dissipation versus ambient temperature [2])
Verlustleistung in Abh. von d. Umgebungstemp.[2])

Disclaimer:
See data book page 2 or website
Haftungssauschluss:
Siehe Datenbuch Seite 2 oder Internet



Forward characteristics (typical values)
Durchlasskennlinien (typische Werte)

1 Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%
2 Mounted on 3 mm² copper pads per terminal – Montage auf 3 mm² Kupferbelag (Lötpads) je Anschluss