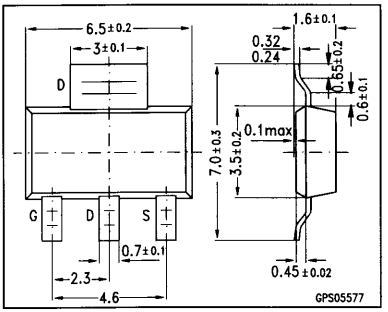
SIEMENS

SIPMOS® Small-Signal Transistor — BSP 295

V_{DS} = 50 V
I_D = 1.7 A
$R_{DS(on)}$ = 0.3 Ω

- N channel
- Enhancement mode
- Package: SOT-223 [1]



Type	Ordering code for version on 12-mm tape [2]
BSP 295	Q67000-S66

Maximum Ratings

Parameter	Symbol	Values	Unit
Drain-source voltage	V_{DS}	50	V
Drain-gate voltage, R_{GS} = 20 kΩ	V_{DGR}	50	
Gate-source voltage	V_{GS}	± 10	
Gate-source peak voltage, aperiodic	V_{gs}	± 20	
Continuous drain current, T_A = 27 °C	I_D	1.7	A
Pulsed drain current, T_A = 25 °C	$I_{D\,puls}$	6.8	
Max. power dissipation, T_A = 25 °C	P_{tot}	1.5	W
Operating and storage temperature range	T_j, T_{stg}	– 55 ... + 150	°C

Thermal resistance, chip-ambient [3]	R_{thJA}	70	K/W
Thermal resistance, chip soldering point R_{thJS}	R_{thJS}	6	
DIN humidity category, DIN 40 040	–	E	–
IEC climatic category, DIN IEC 68-1	–	55/150/56	

[1] See chapter Package Outlines.
[2] E-6327: 1000 pieces / reel
[3] Transistor on epoxy pcb 40 mm × 40 mm × 1.5 mm with 6 cm² copper area for drain connection.

Electrical Characteristics

at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage V_{GS} = 0, I_D = 0.25 mA	$V_{(BR)DSS}$	50	–	–	V
Gate threshold voltage $V_{GS} = V_{DS}$, I_D = 1 mA	$V_{GS(th)}$	0.8	1.2	2.0	
Zero gate voltage drain current V_{DS} = 50 V, V_{GS} = 0 T_j = 25 °C T_j = 125 °C	I_{DSS}	 – –	 0.1 8.0	 1.0 50	µA
V_{DS} = 30 V, V_{GS} = 0 T_j = 25 °C		 –	 –	 100	nA
Gate-source leakage current V_{GS} = 20 V, V_{DS} = 0	I_{GSS}	–	10	100	nA
Drain-source on-resistance V_{GS} = 10 V, I_D = 1.7 A V_{GS} = 4.5 V, I_D = 1.7 A	$R_{DS(on)}$	– –	0.2 0.4	0.3 0.5	Ω
Dynamic Characteristics					
Forward transconductance $V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$, I_D = 1.7 A	g_{fs}	0.5	1.4	–	S
Input capacitance V_{GS} = 0, V_{DS} = 25 V, f = 1 MHz	C_{iss}	–	370	550	pF
Output capacitance V_{GS} = 0, V_{DS} = 25 V, f = 1 MHz	C_{oss}	–	110	170	
Reverse transfer capacitance V_{GS} = 0, V_{DS} = 25 V, f = 1 MHz	C_{rss}	–	40	60	
Turn-on time t_{on}, ($t_{on} = t_{d(on)} + t_r$) V_{DD} = 30 V, V_{GS} = 10 V, R_{GS} = 50 Ω, I_D = 0.29 A	$t_{d(on)}$ t_r	– –	8 15	12 25	ns
Turn-off time t_{off}, ($t_{off} = t_{d(off)} + t_f$) V_{DD} = 30 V, V_{GS} = 10 V, R_{GS} = 50 Ω, I_D = 0.29 A	$t_{d(off)}$ t_f	– –	100 75	150 110	

Electrical Characteristics (cont'd)

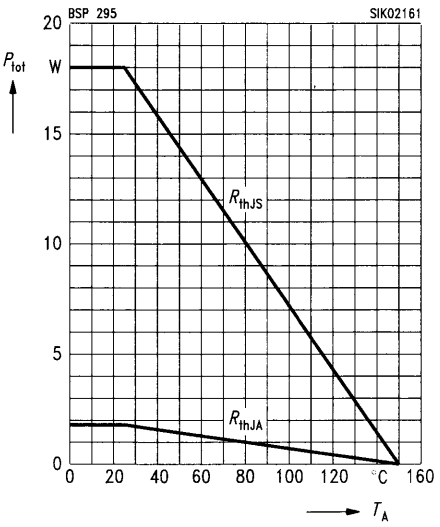
at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse Diode					
Continuous reverse drain current T_A = 25 °C	I_S	–	–	1.7	A
Pulsed reverse drain current T_A = 25 °C	I_{SM}	–	–	6.8	
Diode forward on-voltage I_F = 3.4 A, V_{GS} = 0	V_{SD}	–	1.0	1.5	V

Characteristics

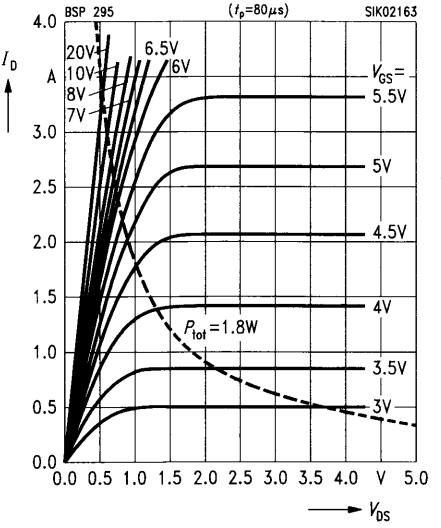
at T_j = 25 °C, unless otherwise specified

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

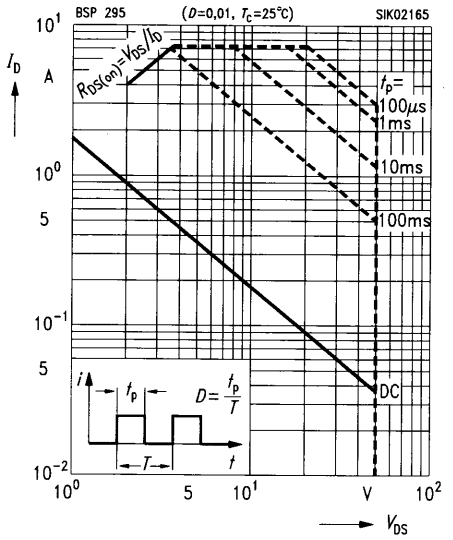


Typ. output characteristics $I_D = f(V_{DS})$

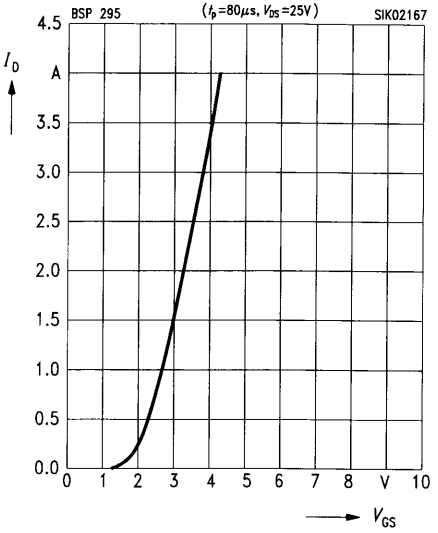
parameter: t_p = 80 µs



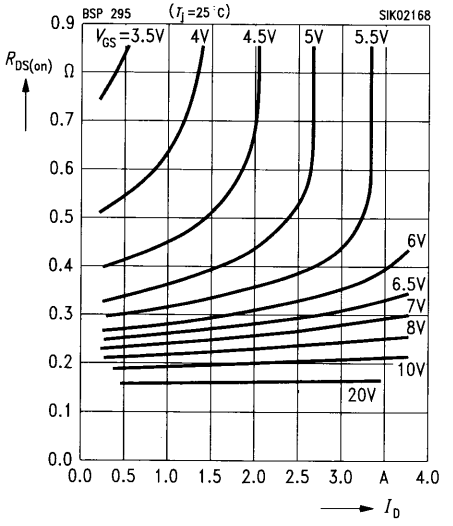
Safe operating area $I_D = f(V_{DS})$
parameter: D = 0.01, T_C = 25 °C



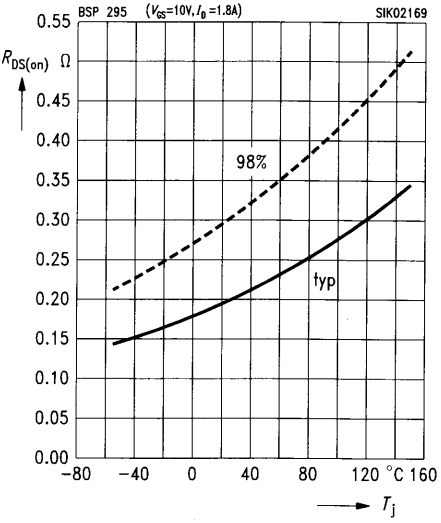
Typ. transfer characteristics $I_D = f(V_{GS})$
parameter: t_p = 80 µs, V_{DS} = 25 V



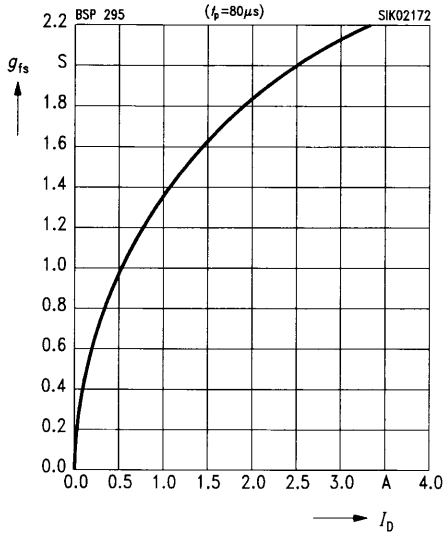
Typ. drain-source on-resistance
$R_{DS(on)} = f(I_D)$
parameter: V_{GS}



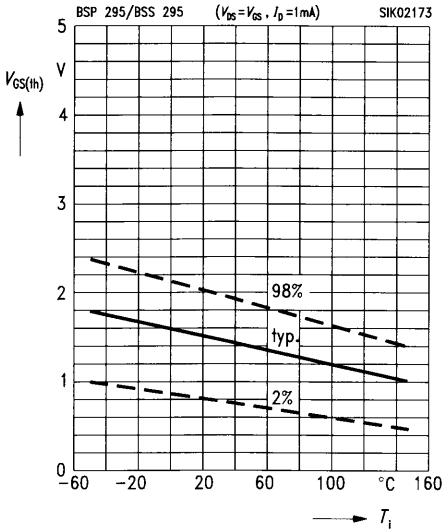
Drain-source on-resistance
$R_{DS(on)} = f(T_j)$
parameter: I_D = 1.7 A, V_{GS} = 10 V, (spread)



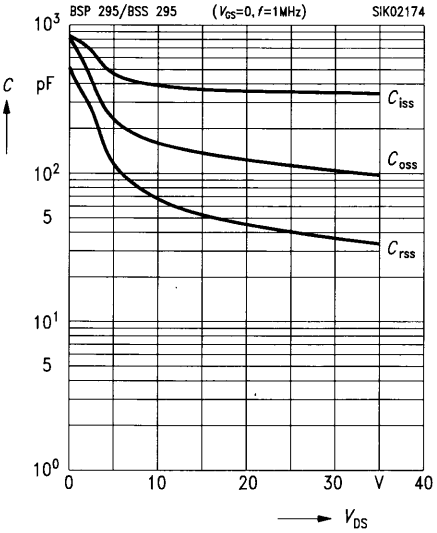
Typ. forward transconductance $g_{fs} = f(I_D)$
parameter: $V_{DS} \geq 2 \times I_D \times R_{DS(on)max.}$, t_p = 80 µs



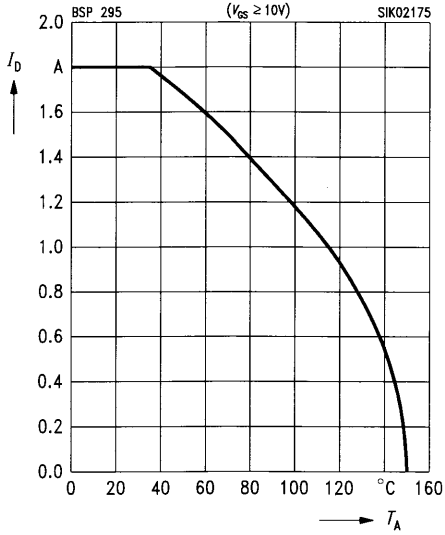
Gate threshold voltage $V_{GS(th)} = f(T_j)$
parameter: $V_{DS} = V_{GS}$, I_D = 1 mA, (spread)



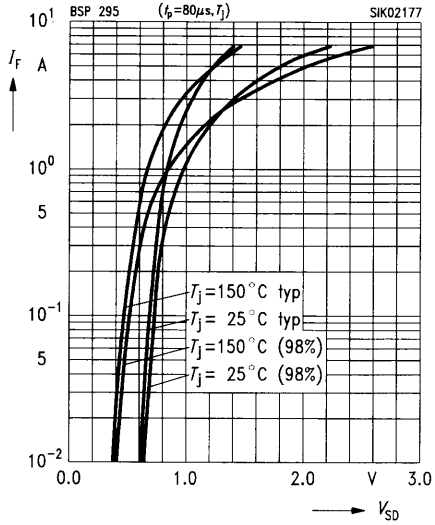
Typ. capacitances $C = f(V_{DS})$
parameter: V_{GS} = 0, f = 1 MHz



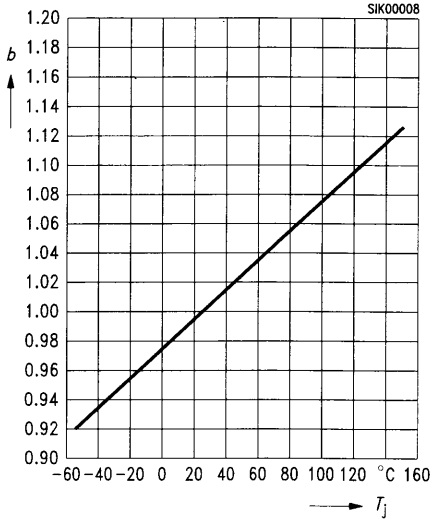
Drain current $I_D = f(T_A)$
parameter: $V_{GS} \geq$ 10 V



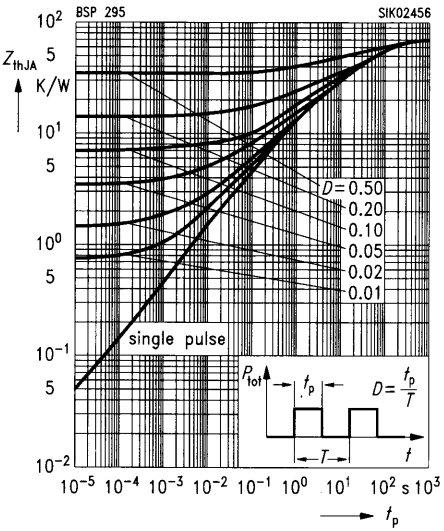
Forward characteristics of reverse diode
$I_F = f(V_{SD})$
parameter: t_p = 80 µs, T_j, (spread)



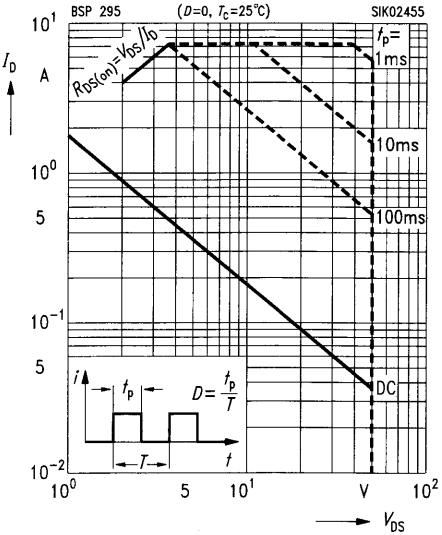
Drain-source breakdown voltage
$V_{(BR)\,DSS} = b \times V_{(BR)DSS}$ (25 °C)



Transient thermal impedance $Z_{thJA} = f(t_p)$
parameter: $D = t_p / T$



Safe operating area $I_D = f(V_{DS})$
parameter: D = 0, T_C = 25 °C

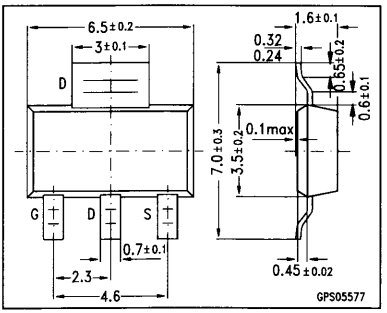


SIEMENS

SIPMOS® Small-Signal Transistor — BSP 299

V_{DS} = 500 V
I_D = 0.4 A
$R_{DS(on)}$ = 4.0 Ω

- N channel
- Enhancement mode
- Avalanche rated
- Package: SOT-223 [1]



Type	Ordering code for version on 12-mm tape [2]
BSP 299	Q67000-S225

Maximum Ratings

Parameter	Symbol	Values	Unit
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current, T_A = 44 °C	I_D	0.4	A
Pulsed drain current, T_A = 25 °C	$I_{D\,puls}$	1.6	
Avalanche current, limited by $T_{j\,max}$	I_{AR}	1.2	
Avalanche energy, periodic, limited by $T_{j\,(max)}$	E_{AR}	4.0	mJ
Avalanche energy, single pulse V_{DD} = 50 V, R_{GS} = 25 Ω, T_j = 25 °C I_D = 1.2 A, L = 163 mH	E_{AS}	130	
Max. power dissipation, T_A = 25 °C	P_{tot}	1.8	W
Operating and storage temperature range	T_j, T_{stg}	– 55 ... + 150	°C

Thermal resistance, chip-ambient [3]	R_{thJA}	70	K/W
Thermal resistance, chip soldering point R_{thJS}	R_{thJS}	6	
DIN humidity category, DIN 40 040	–	E	–
IEC climatic category, DIN IEC 68-1	–	55/150/56	

[1] See chapter Package Outlines.
[2] E-6327: 1000 pieces / reel
[3] Transistor on epoxy pcb 40 mm × 40 mm × 1.5 mm with 6 cm² copper area for drain connection.

Electrical Characteristics

at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage V_{GS} = 0, I_D = 0.25 mA	$V_{(BR)DSS}$	500	–	–	V
Gate threshold voltage V_{GS} = V_{DS}, I_D = 1 mA	$V_{GS(th)}$	2.1	3.0	4.0	
Zero gate voltage drain current V_{DS} = 500 V, V_{GS} = 0 T_j = 25 °C T_j = 125 °C	I_{DSS}	 – –	 0.1 10	 1.0 100	µA
Gate-source leakage current V_{GS} = 20 V, V_{DS} = 0	I_{GSS}	–	10	100	nA
Drain-source on-resistance V_{GS} = 10 V, I_D = 0.4 A	$R_{DS(on)}$	–	3.5	4.0	Ω
Dynamic Characteristics					
Forward transconductance $V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$, I_D = 0.4 A	g_{fs}	0.3	1.2	–	S
Input capacitance V_{GS} = 0, V_{DS} = 25 V, f = 1 MHz	C_{iss}	–	300	400	pF
Output capacitance V_{GS} = 0, V_{DS} = 25 V, f = 1 MHz	C_{oss}	–	40	60	
Reverse transfer capacitance V_{GS} = 0, V_{DS} = 25 V, f = 1 MHz	C_{rss}	–	15	25	
Turn-on time t_{on}, (t_{on} = $t_{d(on)}$ + t_r) V_{DD} = 30 V, V_{GS} = 10 V, R_{GS} = 50 Ω, I_D = 0.29 A	$t_{d(on)}$ t_r	– –	8 15	12 22	ns
Turn-off time t_{off}, (t_{off} = $t_{d(off)}$ + t_f) V_{DD} = 30 V, V_{GS} = 10 V, R_{GS} = 50 Ω, I_D = 0.29 A	$t_{d(off)}$ t_f	– –	55 30	70 40	

Electrical Characteristics (cont'd)

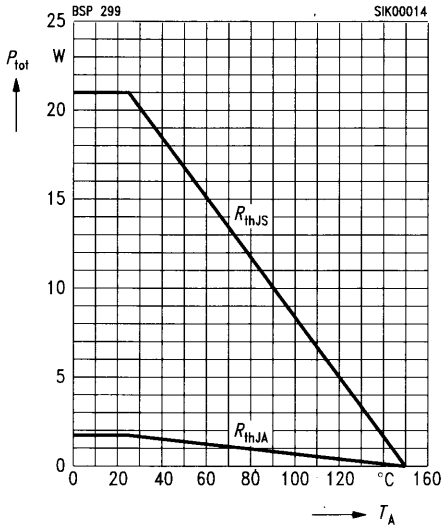
at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse Diode					
Continuous source current	I_S	–	–	0.4	A
Pulsed source current	I_{SM}	–	–	1.6	
Diode forward on-voltage I_F = 0.8 A, V_{GS} = 0	V_{SD}	–	0.9	1.2	V
Reverse recovery time V_R = 100 V, $I_F = I_S$, di_F/dt = 100 A/µs	t_{rr}	–	300	–	ns
Reverse recovery charge V_R = 100 V, $I_F = I_S$, di_F/dt = 100 A/µs	Q_{rr}	–	2.5	–	µC

Characteristics

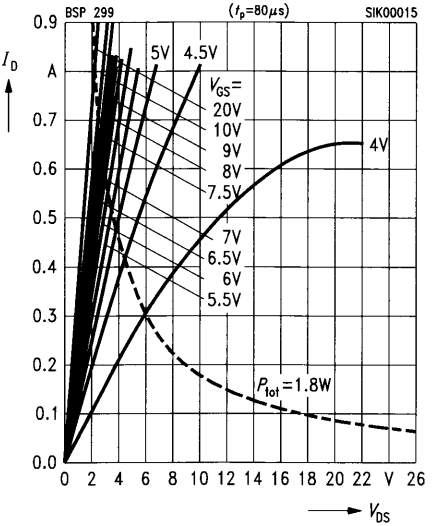
at T_j = 25 °C, unless otherwise specified.

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

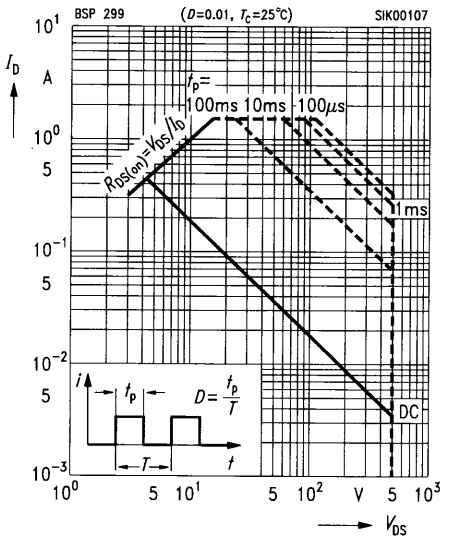


Typ. output characteristics $I_D = f(V_{DS})$

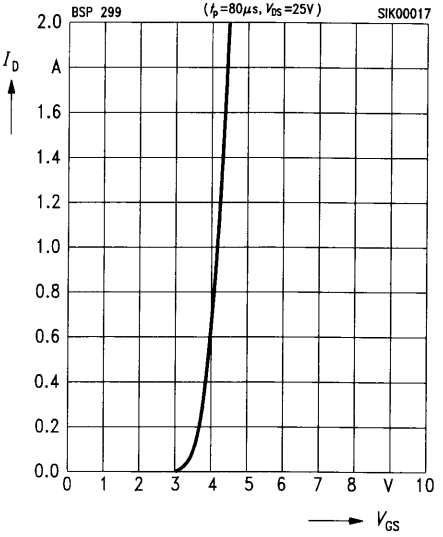
parameter: t_p = 80 µs



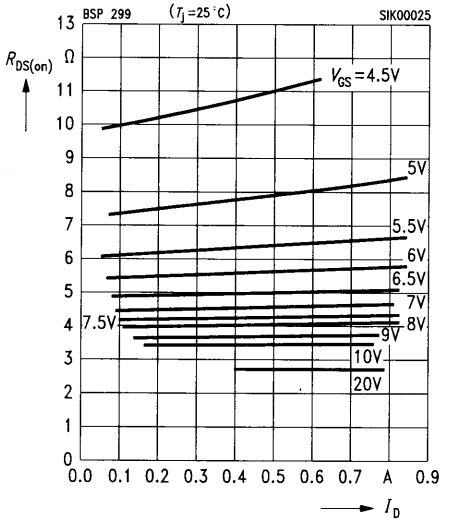
Safe operating area $I_D = f(V_{DS})$
parameter: D = 0.01, T_C = 25 °C



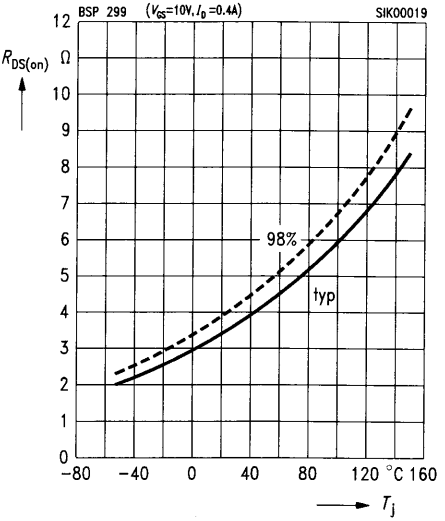
Typ. transfer characteristics $I_D = f(V_{GS})$
parameter: t_p = 80 µs, V_{DS} = 25 V



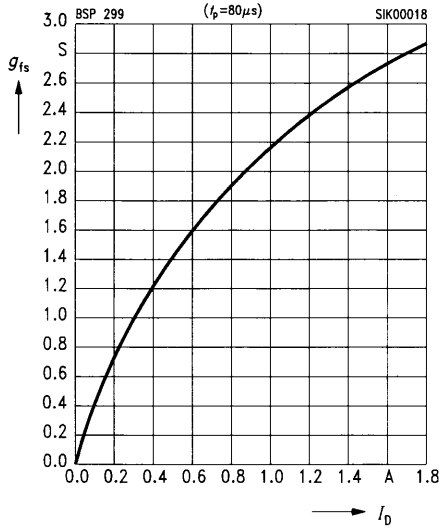
Typ. drain-source on-resistance
$R_{DS(on)} = f(I_D)$
parameter: V_{GS}



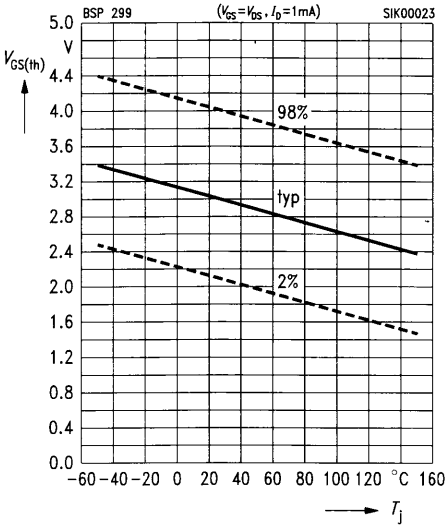
Drain-source on-resistance
$R_{DS(on)} = f(T_j)$
parameter: I_D = 0.4 A, V_{GS} = 10 V, (spread)



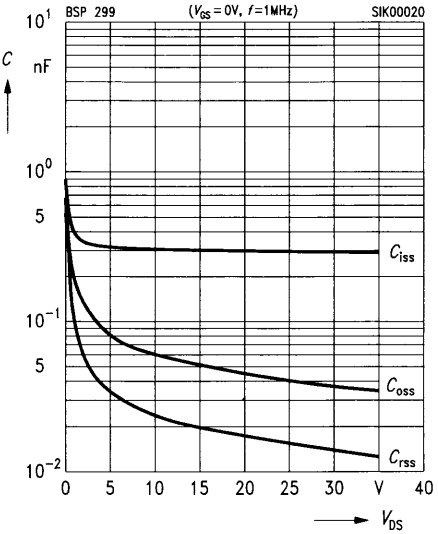
Typ. forward transconductance $g_{fs} = f(I_D)$
parameter: $V_{DS} \geq 2 \times I_D \times R_{DS(on)max.}$, $t_p = 80\ \mu s$



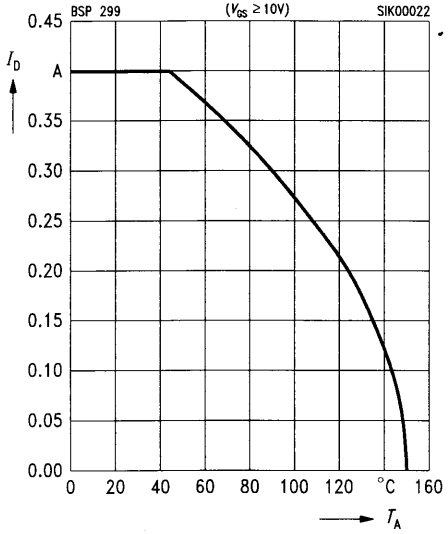
Gate threshold voltage $V_{GS(th)} = f(T_j)$
parameter: $V_{DS} = V_{GS}$, I_D = 1 mA, (spread)



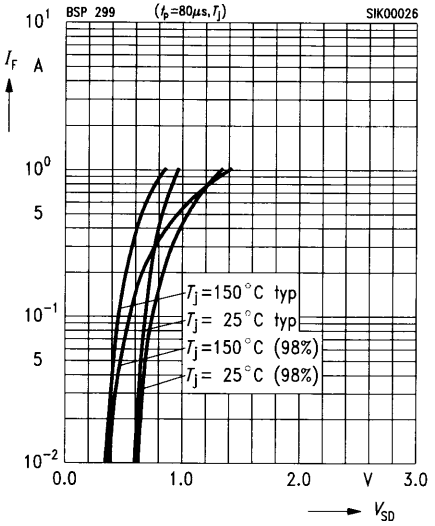
Typ. capacitances $C = f(V_{DS})$
parameter: V_{GS} = 0, f = 1 MHz



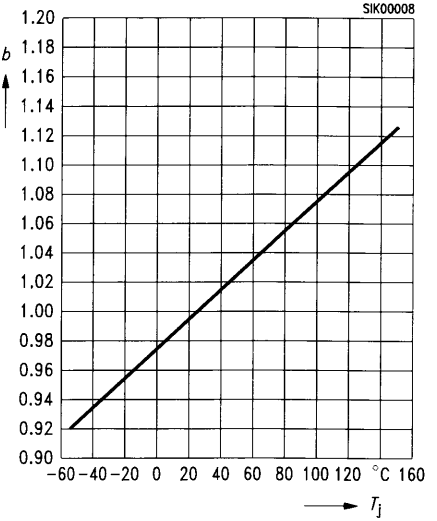
Drain current $I_D = f(T_A)$
parameter: $V_{GS} \geq 10$ V



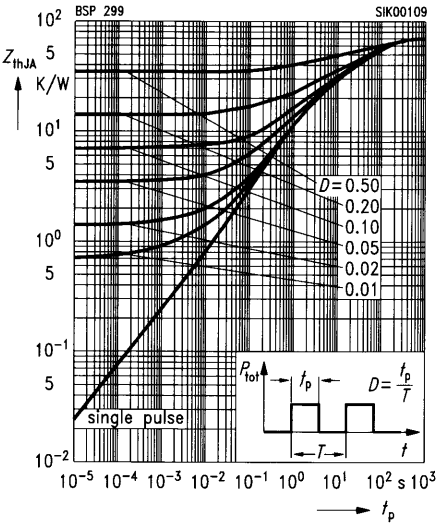
Forward characteristics of reverse diode
$I_F = f(V_{SD})$
parameter: t_p = 80 µs, T_j, (spread)



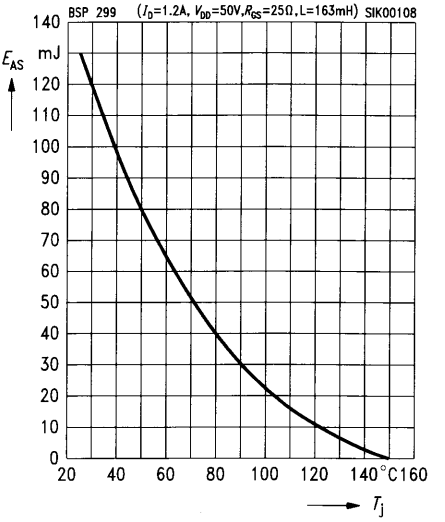
Drain-source breakdown voltage
$V_{(BR)\,DSS} = b \times V_{(BR)DSS}$ (25 °C)



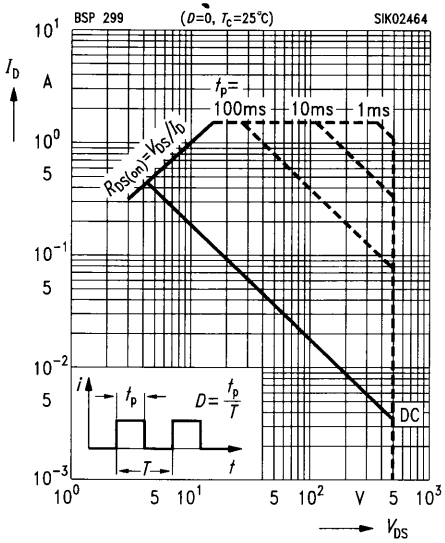
Transient thermal impedance $Z_{thJA} = f(t_p)$
parameter: $D = t_p / T$



Avalanche energy $E_{AS} = f(T_j)$
parameter: I_D = 1.2 A, V_{DD} = 50 V,
R_{GS} = 25 Ω, L = 163 µH



Safe operating area $I_D = f(V_{DS})$
parameter: $D = 0$, $T_C = 25$ °C

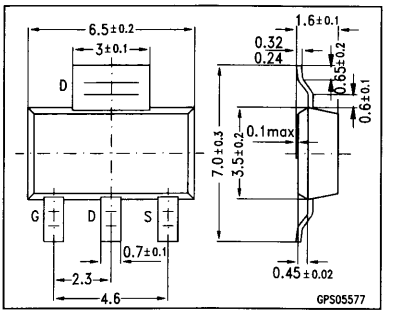


SIEMENS

SIPMOS® Small-Signal Transistor — BSP 315

V_{DS} = – 50 V
I_D = – 1.0 A
$R_{DS(on)}$ = 0.8 Ω

- P channel
- Enhancement mode
- Package: SOT-223 [1]



Type	Ordering code for version on 12-mm tape [2]
BSP 315	Q67000-S75

Maximum Ratings

Parameter	Symbol	Values	Unit
Drain-source voltage	V_{DS}	– 50	V
Drain-gate voltage, R_{GS} = 20 kΩ	V_{DGR}	– 50	
Gate-source voltage	V_{GS}	± 20	
Continuous drain current, T_A = 39 °C	I_D	– 1.1	A
Pulsed drain current, T_A = 25 °C	$I_{D\,puls}$	– 4.4	
Max. power dissipation, T_A = 25 °C	P_{tot}	1.8	W
Operating and storage temperature range	T_j, T_{stg}	– 55 ... + 150	°C

Thermal resistance, chip-ambient [3] (without heat sink)	R_{thJA}	70	K/W
Thermal resistance, chip soldering point R_{thJS}	R_{thJS}	7	
DIN humidity category, DIN 40 040	–	E	–
IEC climatic category, DIN IEC 68-1	–	55/150/56	

[1] See chapter Package Outlines.
[2] E-6327: 1000 pieces / reel
[3] Transistor on epoxy pcb 40 mm × 40 mm × 1.5 mm with 6 cm² copper area for drain connection.

Electrical Characteristics

at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage V_{GS} = 0, I_D = – 0.25 mA	$V_{(BR)DSS}$	– 50	–	–	V
Gate threshold voltage V_{GS} = V_{DS}, I_D = – 1 mA	$V_{GS(th)}$	– 0.8	– 1.1	– 2.0	
Zero gate voltage drain current V_{DS} = – 50 V, V_{GS} = 0 V_{DS} = – 30 V, V_{GS} = 0	I_{DSS}	 –	– 0.1 –	– 1.0 – 100	µA nA
Gate-source leakage current V_{GS} = – 20 V, V_{DS} = 0	I_{GSS}	–	– 10	– 100	nA
Drain-source on-resistance V_{GS} = – 10 V, I_D = – 1.1 A	$R_{DS(on)}$	–	0.65	0.8	Ω
Dynamic Characteristics					
Forward transconductance $V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$, I_D = – 1.1 A	g_{fs}	0.25	0.7	–	S
Input capacitance V_{GS} = 0, V_{DS} = – 25 V, f = 1 MHz	C_{iss}	–	300	400	pF
Output capacitance V_{GS} = 0, V_{DS} = – 25 V, f = 1 MHz	C_{oss}	–	150	230	
Reverse transfer capacitance V_{GS} = 0, V_{DS} = – 25 V, f = 1 MHz	C_{rss}	–	85	130	
Turn-on time t_{on}, (t_{on} = $t_{d(on)}$ + t_r) V_{DD} = – 30 V, V_{GS} = – 10 V, R_{GS} = 50 Ω, I_D = – 0.29 A	$t_{d(on)}$ t_r	– –	8 35	12 55	ns
Turn-off time t_{off}, (t_{off} = $t_{d(off)}$ + t_f) V_{DD} = – 30 V, V_{GS} = – 10 V, R_{GS} = 50 Ω, I_D = – 0.29 A	$t_{d(off)}$ t_f	– –	80 140	110 190	

Electrical Characteristics (cont'd)

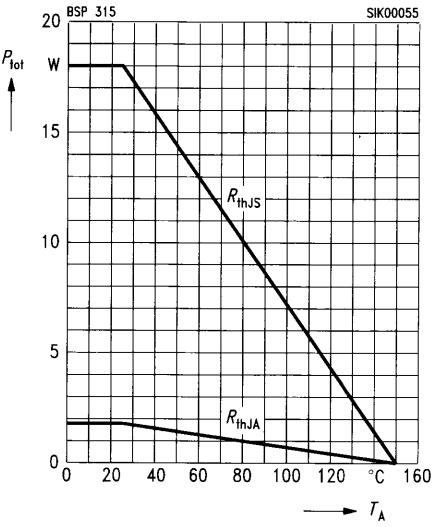
at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse Diode					
Continuous source current	I_S	–	–	– 1.1	A
Pulsed source current	I_{SM}	–	–	– 4.4	
Diode forward on-voltage I_F = – 2.2 A, V_{GS} = 0	V_{SD}	–	– 1.2	– 1.5	V

Characteristics

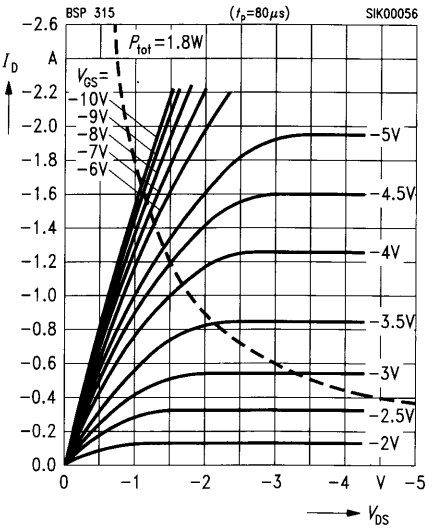
at T_j = 25 °C, unless otherwise specified

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

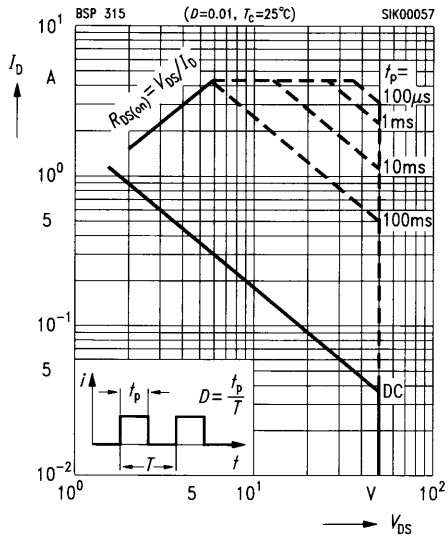


Typ. output characteristics $I_D = f(V_{DS})$

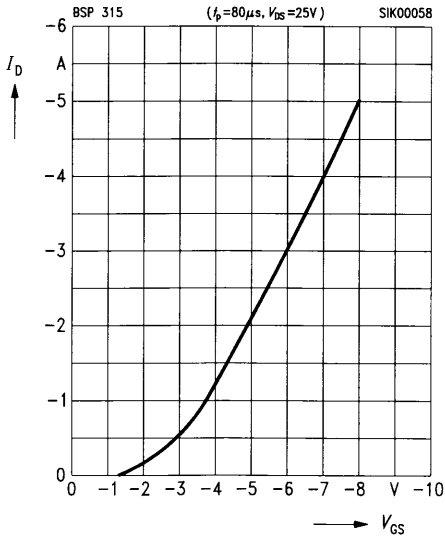
parameter: t_p = 80 µs



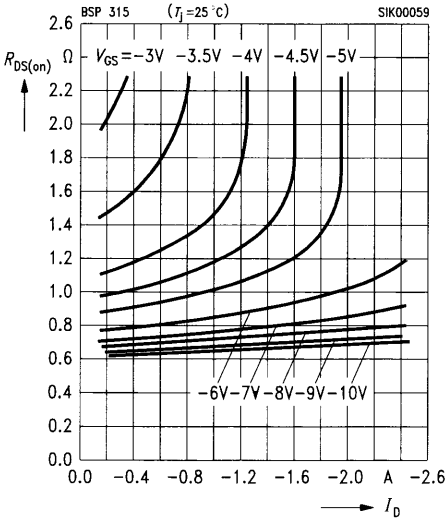
Safe operating area $I_D = f(V_{DS})$
parameter: $D = 0.01$, $T_C = 25$ °C



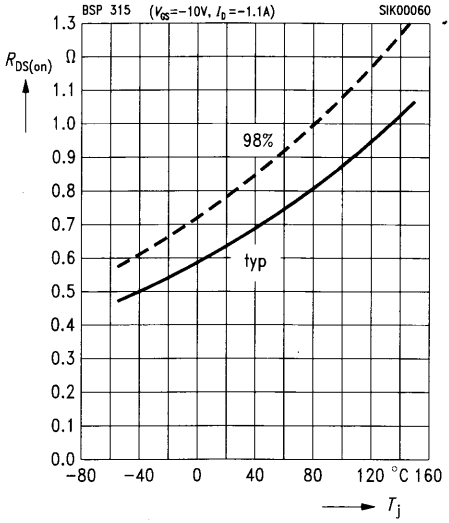
Typ. transfer characteristics $I_D = f(V_{GS})$
parameter: $t_p = 80$ µs, $V_{DS} = 25$ V



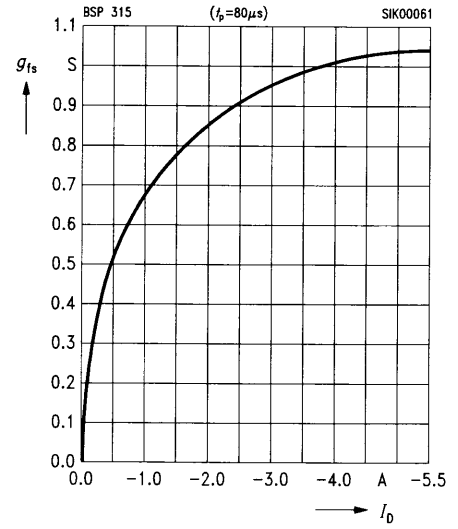
Typ. drain-source on-resistance
$R_{DS(on)} = f(I_D)$
parameter: V_{GS}



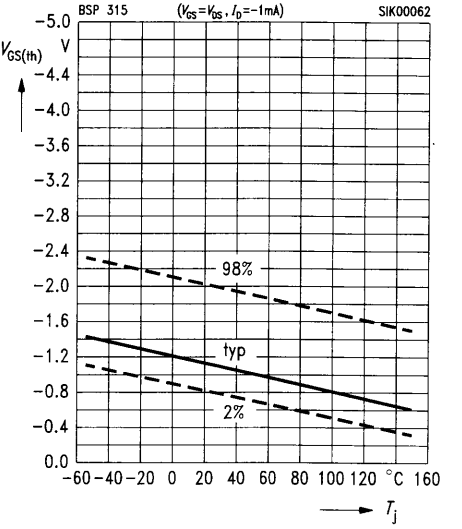
Drain-source on-resistance
$R_{DS(on)} = f(T_j)$
parameter: $I_D = -1.1$ A, $V_{GS} = -10$ V, (spread)



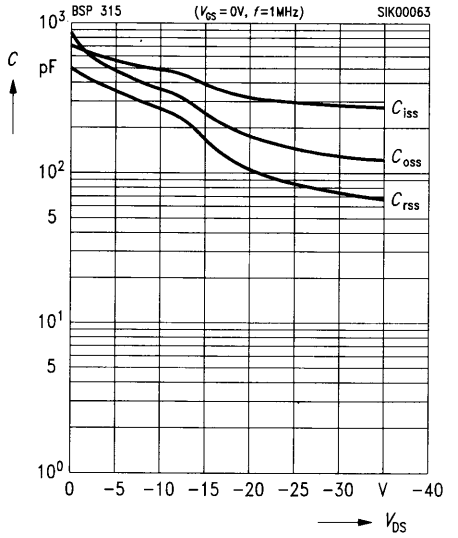
Typ. forward transconductance $g_{fs} = f(I_D)$
parameter: $V_{DS} \geq 2 \times I_D \times R_{DS(on)max.}$, t_p = 80 µs



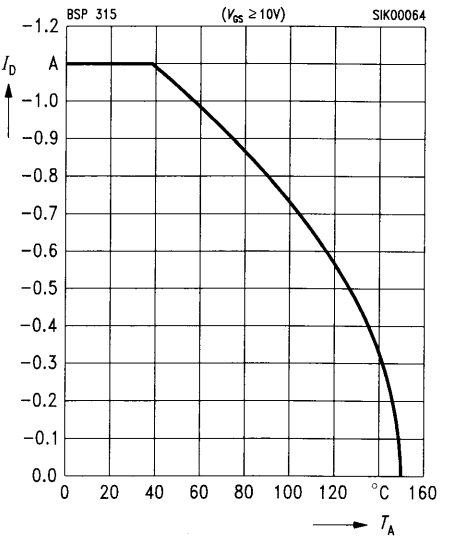
Gate threshold voltage $V_{GS(th)} = f(T_j)$
parameter: $V_{DS} = V_{GS}$, I_D = 1 mA, (spread)



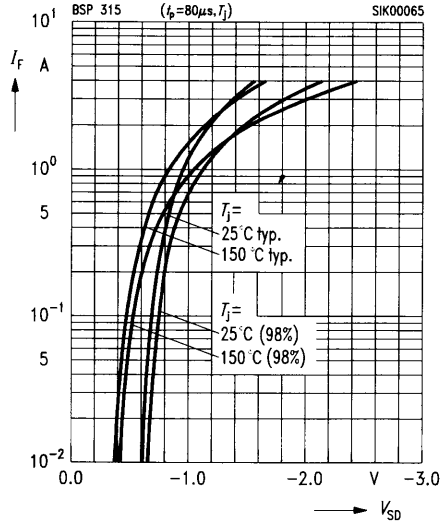
Typ. capacitances $C = f(V_{DS})$
parameter: V_{GS} = 0, f = 1 MHz



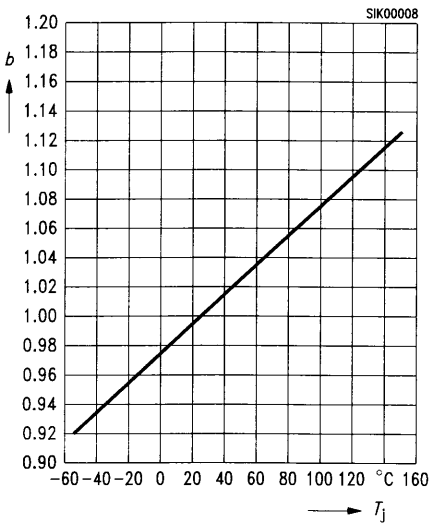
Drain current $I_D = f(T_A)$
parameter: $V_{GS} \geq$ 10 V



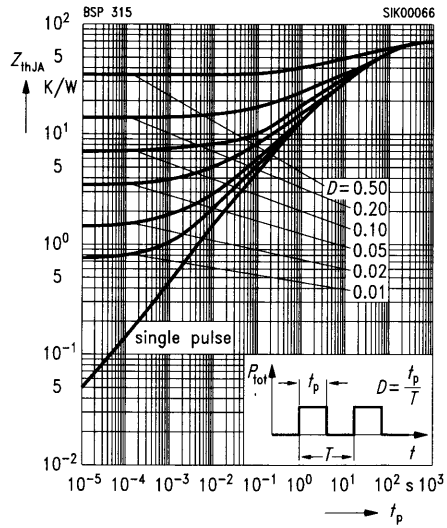
Forward characteristics of reverse diode
$I_F = f(V_{SD})$
parameter: t_p = 80 µs, T_j, (spread)



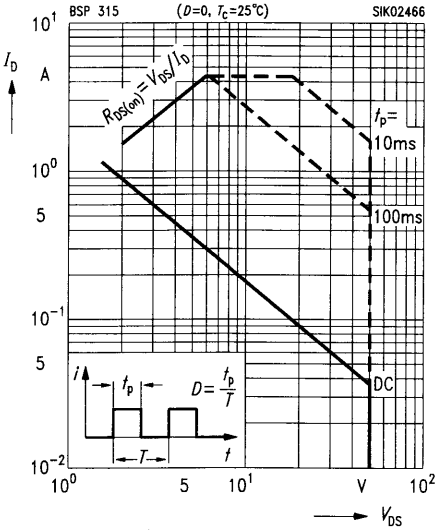
Drain-source breakdown voltage
$V_{(BR)\,DSS} = b \times V_{(BR)DSS}$ (25 °C)



Transient thermal impedance $Z_{thJA} = f(t_p)$
parameter: $D = t_p / T$



Safe operating area $I_D = f(V_{DS})$
parameter: D = 0, T_C = 25 °C

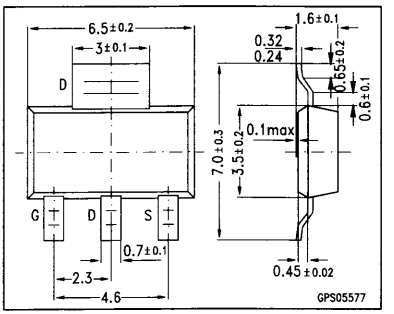


SIEMENS

SIPMOS® Small-Signal Transistor — BSP 317

V_{DS} = – 200 V
I_D = – 0.37 A
$R_{DS(on)}$ = 6 Ω

- P channel
- Enhancement mode
- Package: SOT-223 [1]



Type	Ordering code for version on 12-mm tape [2]
BSP 317	Q67000-S94

Maximum Ratings

Parameter	Symbol	Values	Unit
Drain-source voltage	V_{DS}	– 200	V
Drain-gate voltage, R_{GS} = 20 kΩ	V_{DGR}	– 200	
Gate-source voltage	V_{GS}	± 20	
Continuous drain current, T_A = 25 °C	I_D	– 0.37	A
Pulsed drain current, T_A = 25 °C	$I_{D\,puls}$	– 1.48	
Max. power dissipation, T_A = 25 °C	P_{tot}	1.8	W
Operating and storage temperature range	T_j, T_{stg}	– 55 ... + 150	°C

Thermal resistance, chip-ambient [3]	R_{thJA}	70	K/W
Thermal resistance, chip soldering point R_{thJS}	R_{thJS}	7	
DIN humidity category, DIN 40 040	–	E	–
IEC climatic category, DIN IEC 68-1	–	55/150/56	

[1] See chapter Package Outlines.
[2] E-6327: 1000 pieces / reel
[3] Transistor on epoxy pcb 40 mm × 40 mm × 1.5 mm with 6 cm² copper area for drain connection.

Electrical Characteristics

at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage V_{GS} = 0, I_D = – 0.25 mA	$V_{(BR)DSS}$	– 200	–	–	V
Gate threshold voltage V_{GS} = V_{DS}, I_D = – 1 mA	$V_{GS(th)}$	– 0.8	– 1.1	– 2.0	
Zero gate voltage drain current V_{DS} = – 200 V, V_{GS} = 0 V_{DS} = – 130 V, V_{GS} = 0	I_{DSS}	– –	– 0.1 –	– 1.0 – 100	µA nA
Gate-source leakage current V_{GS} = – 20 V, V_{DS} = 0	I_{GSS}	–	– 10	– 100	nA
Drain-source on-resistance V_{GS} = – 10 V, I_D = – 0.37 A	$R_{DS(on)}$	–	3.4	6.0	Ω
Dynamic Characteristics					
Forward transconductance $V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$, I_D = – 0.37 A	g_{fs}	0.25	0.35	–	S
Input capacitance V_{GS} = 0, V_{DS} = – 25 V, f = 1 MHz	C_{iss}	–	270	360	pF
Output capacitance V_{GS} = 0, V_{DS} = – 25 V, f = 1 MHz	C_{oss}	–	50	75	
Reverse transfer capacitance V_{GS} = 0, V_{DS} = – 25 V, f = 1 MHz	C_{rss}	–	15	25	
Turn-on time t_{on}, ($t_{on} = t_{d(on)} + t_r$) V_{DD} = – 30 V, V_{GS} = – 10 V, R_{GS} = 50 Ω, I_D = – 0.29 A	$t_{d(on)}$	–	8	12	ns
	t_r	–	30	45	
Turn-off time t_{off}, ($t_{off} = t_{d(off)} + t_f$) V_{DD} = – 30 V, V_{GS} = – 10 V, R_{GS} = 50 Ω, I_D = – 0.29 A	$t_{d(off)}$	–	80	110	
	t_f	–	90	120	

Electrical Characteristics (cont'd)

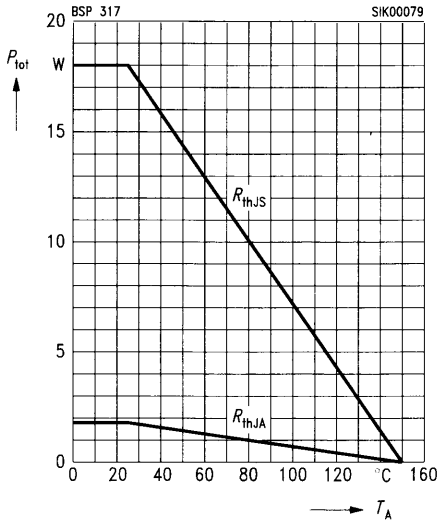
at T_j = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse Diode					
Continuous source current	I_S	–	–	– 0.37	A
Pulsed source current	I_{SM}	–	–	– 1.48	
Diode forward on-voltage I_F = – 0.74 A, V_{GS} = 0	V_{SD}	–	0.95	– 1.1	V

Characteristics

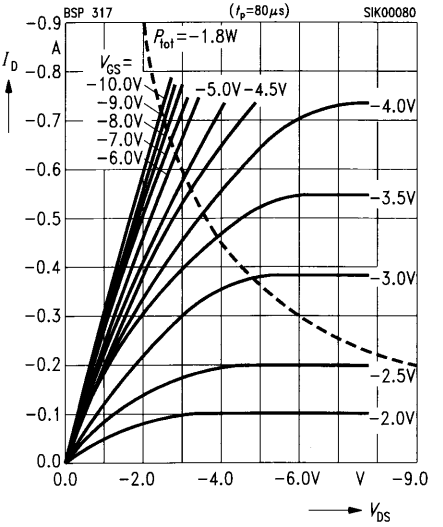
at T_j = 25 °C, unless otherwise specified.

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

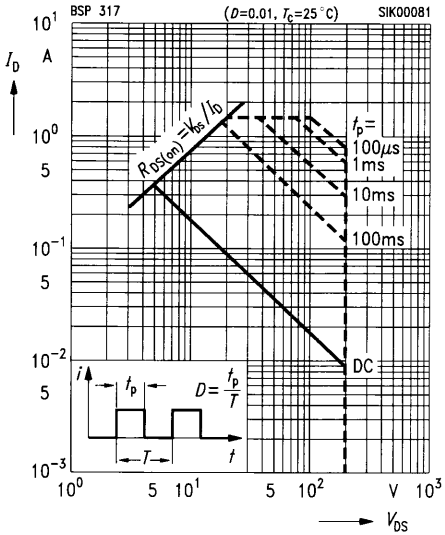


Typ. output characteristics $I_D = f(V_{DS})$

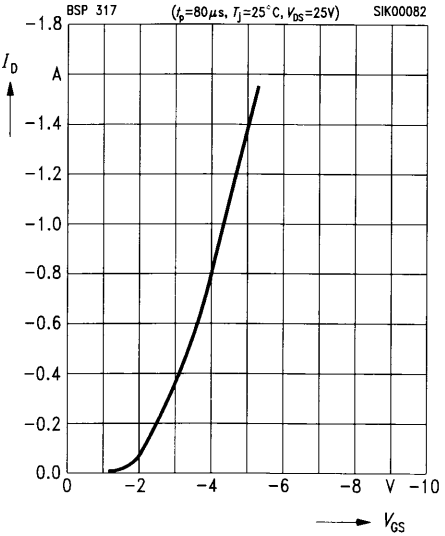
parameter: t_p = 80 µs



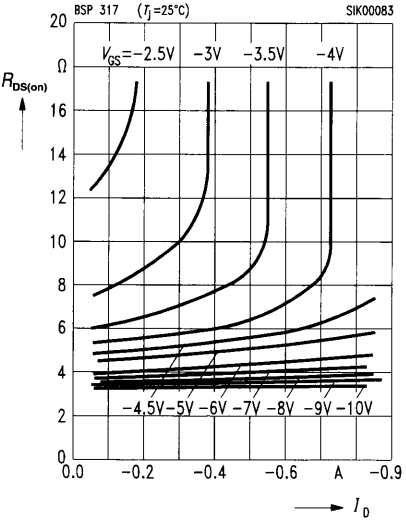
Safe operating area $I_D = f(V_{DS})$
parameter: $D = 0.01$, $T_C = 25$ °C



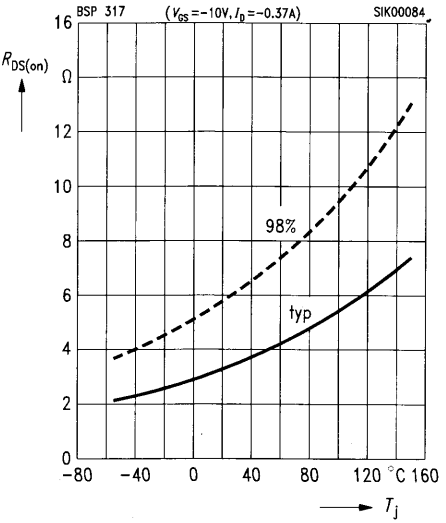
Typ. transfer characteristics $I_D = f(V_{GS})$
parameter: $t_p = 80$ µs, $V_{DS} = 25$ V



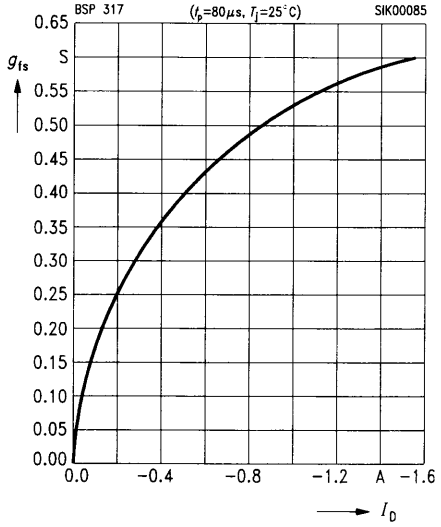
Typ. drain-source on-resistance
$R_{DS(on)} = f(I_D)$
parameter: V_{GS}



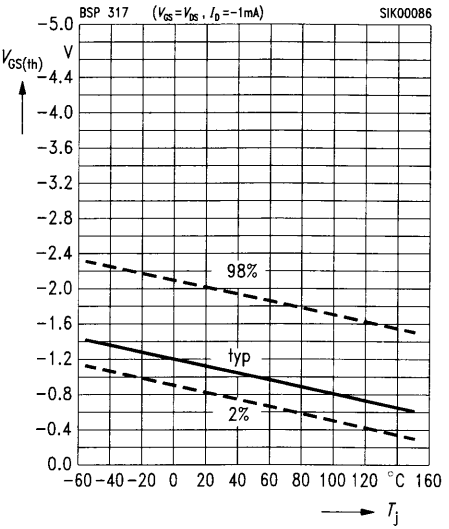
Drain-source on-resistance
$R_{DS(on)} = f(T_j)$
parameter: $I_D = 0.37$ A, $V_{GS} = 10$ V, (spread)



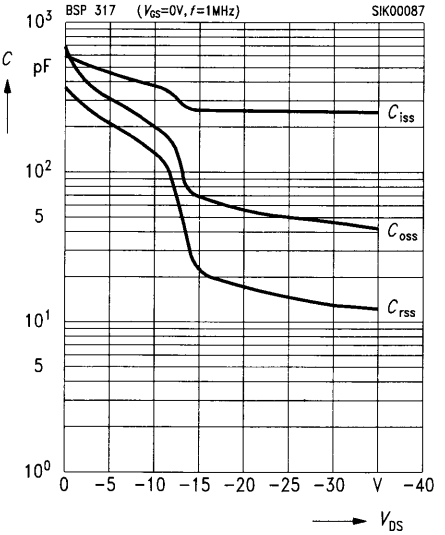
Typ. forward transconductance $g_{fs} = f(I_D)$
parameter: $V_{DS} \geq 2 \times I_D \times R_{DS(on)max.}$, t_p = 80 µs



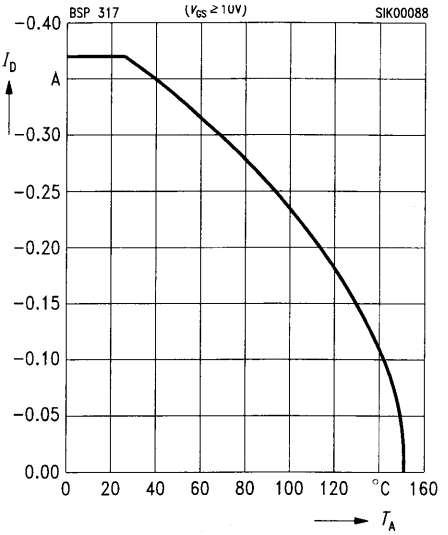
Gate threshold voltage $V_{GS(th)} = f(T_j)$
parameter: $V_{DS} = V_{GS}$, I_D = 1 mA, (spread)



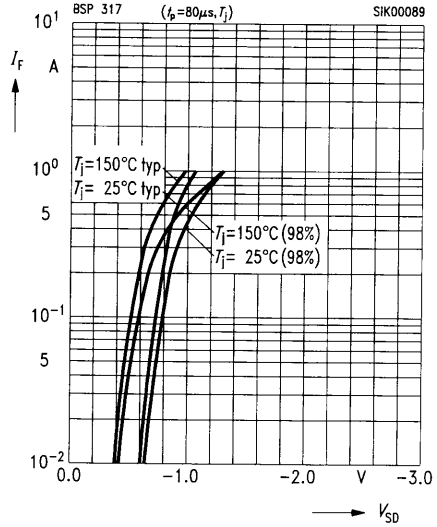
Typ. capacitances $C = f(V_{DS})$
parameter: V_{GS} = 0, f = 1 MHz



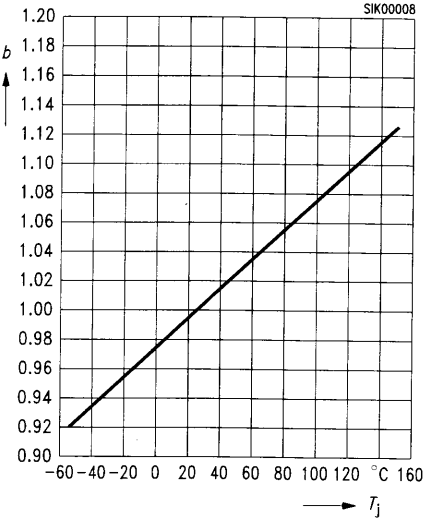
Drain current $I_D = f(T_A)$
parameter: $V_{GS} \geq$ 10 V



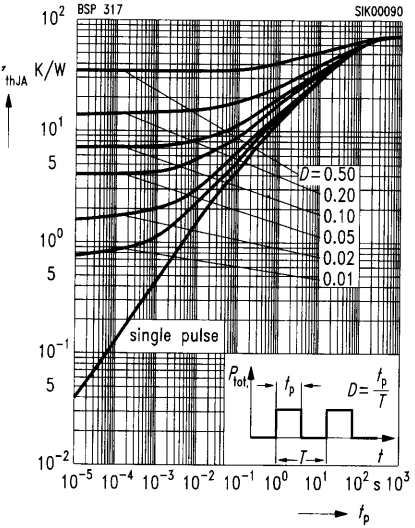
Forward characteristics of reverse diode
$I_F = f(V_{SD})$
parameter: t_p = 80 µs, T_j, (spread)



Drain-source breakdown voltage
$V_{(BR)\,DSS} = b \times V_{(BR)DSS}$ (25 °C)



Transient thermal impedance $Z_{thJA} = f(t_p)$
parameter: $D = t_p / T$



Safe operating area $I_D = f(V_{DS})$
parameter: D = 0, T_C = 25 °C