SIPMOS® Small-Signal-Transistor

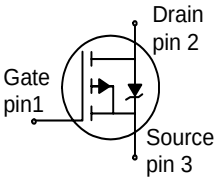
Feature

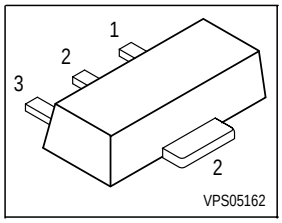
- P-Channel
- Enhancement mode
- Logic Level
- d*v*/d*t* rated
- Pb-free lead plating; RoHS compliant
- Qualified according to AEC Q101
- Halogen-free according to IEC61249-2-21

Product Summary

V_{DS}	-250	V
$R_{DS(on)}$	12	Ω
I_D	-0.19	A

PG-SOT89





Type	Package	Pb-free	Tape and Reel Information	Marking
BSS 192 P	PG-SOT89	Yes	H6327: 1000 pcs/reel	KC

Maximum Ratings, at T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Continuous drain current T_A=25°C T_A=70°C	I_D	 -0.19 -0.1	A
Pulsed drain current T_A=25°C	$I_{D\ puls}$	-0.76	
Reverse diode d*v*/d*t* I_S=-0.19A, V_{DS}=-200V, d*i*/d*t*=-200A/µs, T_{jmax}=150°C	d*v*/d*t*	6	kV/µs
Gate source voltage	V_{GS}	±20	V
Power dissipation T_A=25°C	P_{tot}	1	W
Operating and storage temperature	T_j , T_{stg}	-55... +150	°C
IEC climatic category; DIN IEC 68-1		55/150/56	
ESD Class JESD22-A114-HBM		Class 1a	

Thermal Characteristics

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Thermal resistance, junction - soldering point (Pin 2)	R_{thJS}	-	-	10	K/W
Thermal resistance, junction - ambient, leaded	R_{thJA}	-	-	125	

Electrical Characteristics, at T_j = 25 °C, unless otherwise specified

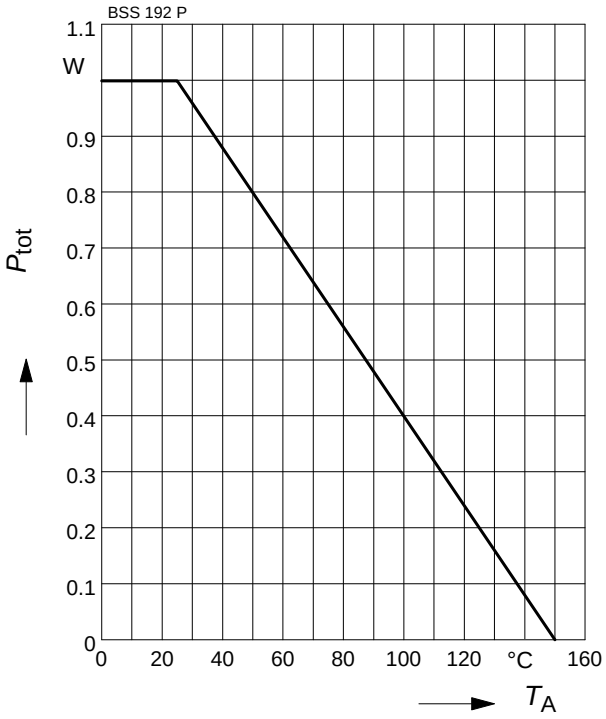
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage V_{GS}=0, I_D=-250µA	$V_{(BR)DSS}$	-250	-	-	V
Gate threshold voltage, V_{GS} = V_{DS} I_D=-130µA	$V_{GS(th)}$	-1	-1.5	-2	
Zero gate voltage drain current V_{DS}=-250V, V_{GS}=0, T_j=25°C V_{DS}=-250V, V_{GS}=0, T_j=150°C	I_{DSS}	 - -	 -0.1 -10	 -0.2 -100	µA
Gate-source leakage current V_{GS}=-20V, V_{DS}=0	I_{GSS}	-	-10	-100	nA
Drain-source on-state resistance V_{GS}=-2.8V, I_D=-0.025A	$R_{DS(on)}$	-	10	20	Ω
Drain-source on-state resistance V_{GS}=-4.5V, I_D=-0.1A	$R_{DS(on)}$	-	8.3	15	
Drain-source on-state resistance V_{GS}=-10V, I_D=-0.19A	$R_{DS(on)}$	-	7.7	12	

Electrical Characteristics, at T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Dynamic Characteristics						
Transconductance	g_{fs}	$\|V_{DS}\|\geq 2*\|I_D\|*R_{DS(on)max}$, I_D=-0.1A	0.19	0.38	-	S
Input capacitance	C_{iss}	V_{GS}=0, V_{DS}=-25V, f=1MHz	-	83	104	pF
Output capacitance	C_{oss}		-	13	16	
Reverse transfer capacitance	C_{rss}		-	6	8	
Turn-on delay time	$t_{d(on)}$	V_{DD}=-125V, V_{GS}=-10V, I_D=-0.19A, R_G=2Ω	-	4.7	7	ns
Rise time	t_r		-	5.2	8	
Turn-off delay time	$t_{d(off)}$		-	72	108	
Fall time	t_f		-	50	75	
Gate Charge Characteristics						
Gate to source charge	Q_{gs}	V_{DD}=-200V, I_D=-0.19A	-	-0.2	-0.25	nC
Gate to drain charge	Q_{gd}		-	-1.9	-2.4	
Gate charge total	Q_g	V_{DD}=-200V, I_D=-0.19A, V_{GS}=0 to -10V	-	-4.9	-6.1	
Gate plateau voltage	$V_{(plateau)}$	V_{DD}=-200V, I_D=-0.19A	-	-2.63	-	V
Reverse Diode						
Inverse diode continuous forward current	I_S	T_A=25°C	-	-	-0.19	A
Inv. diode direct current, pulsed	I_{SM}		-	-	-0.76	
Inverse diode forward voltage	V_{SD}	V_{GS}=0, I_F=-0.19A	-	-0.78	-1.1	V
Reverse recovery time	t_{rr}	V_R=-125V, I_F=I_S, di_F/dt=100A/µs	-	46	57	ns
Reverse recovery charge	Q_{rr}		-	72	90	nC

1 Power dissipation

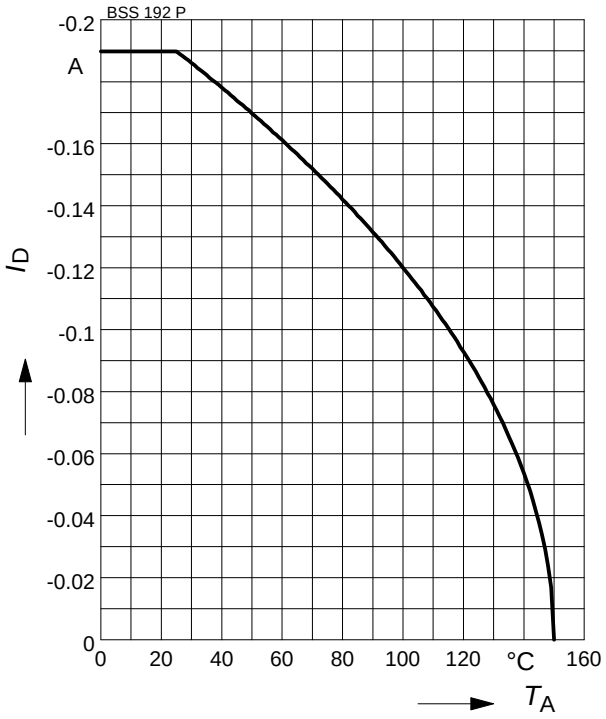
$P_{tot} = f(T_A)$



2 Drain current

$I_D = f(T_A)$

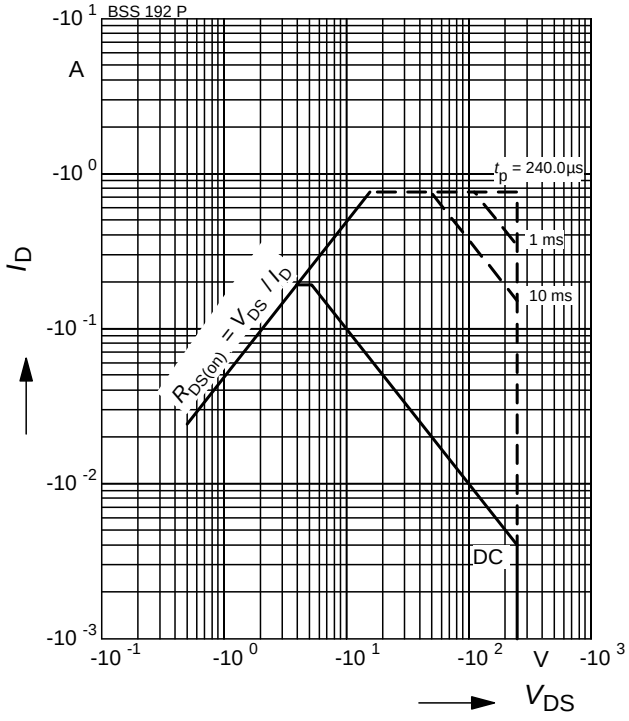
parameter: $|V_{GS}| \geq 10V$



3 Safe operating area

$I_D = f(V_{DS})$

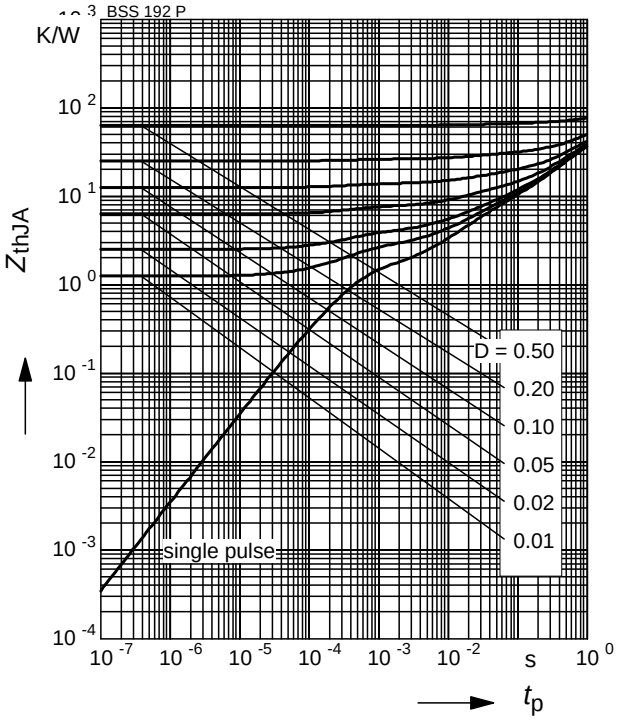
parameter : $D = 0$, $T_A = 25°C$



4 Transient thermal impedance

$Z_{thJA} = f(t_p)$

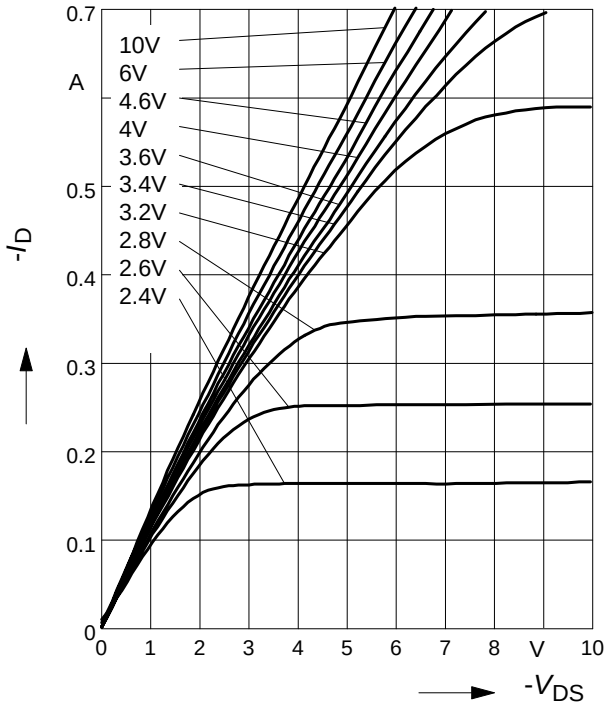
parameter : $D = t_p/T$



5 Typ. output characteristic

$I_D = f(V_{DS})$

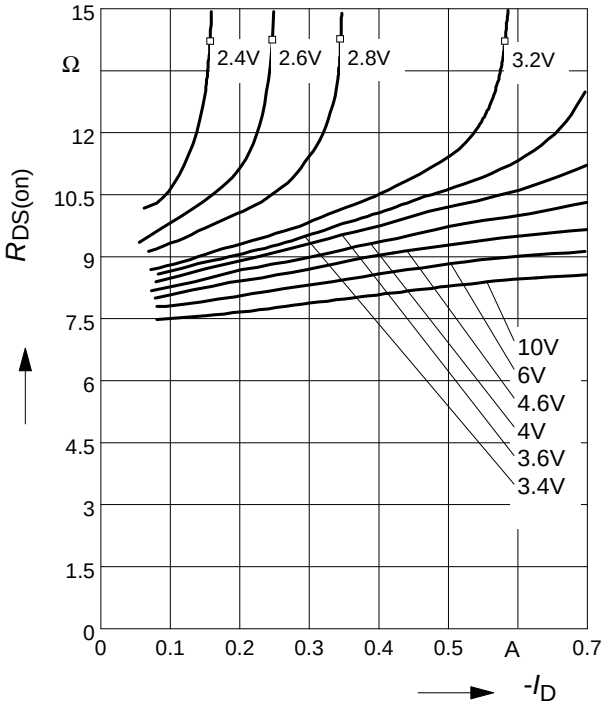
parameter: T_j =25°C, $-V_{GS}$



6 Typ. drain-source on resistance

$R_{DS(on)} = f(I_D)$

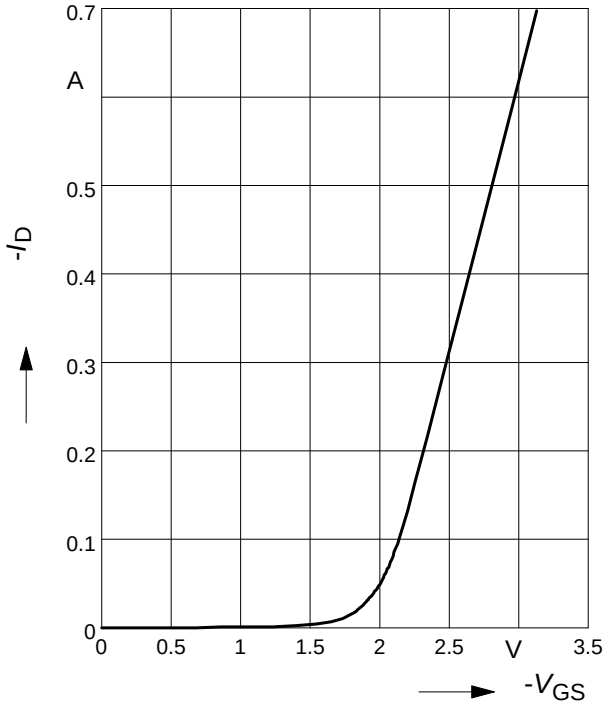
parameter: V_{GS}; T_j =25°C, $-V_{GS}$



7 Typ. transfer characteristics

$I_D = f(V_{GS})$; $|V_{DS}| \geq 2 \times |I_D| \times R_{DS(on)max}$

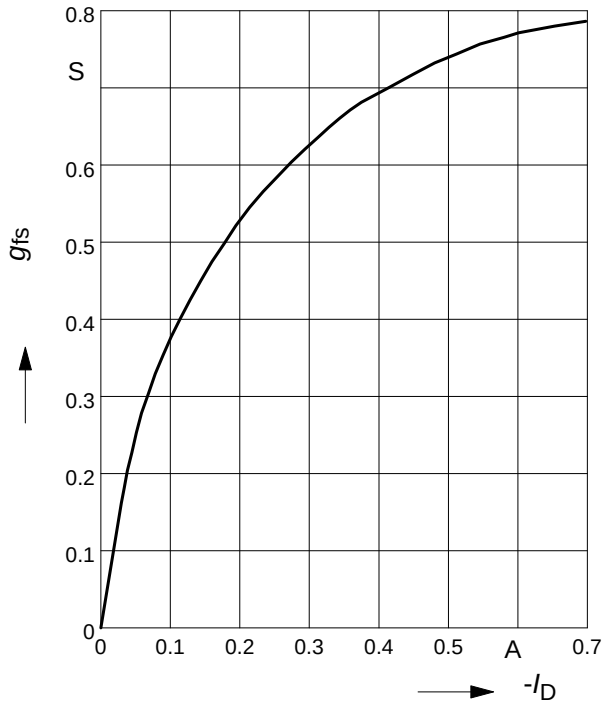
parameter: T_j = 25 °C



8 Typ. forward transconductance

$g_{fs} = f(I_D)$

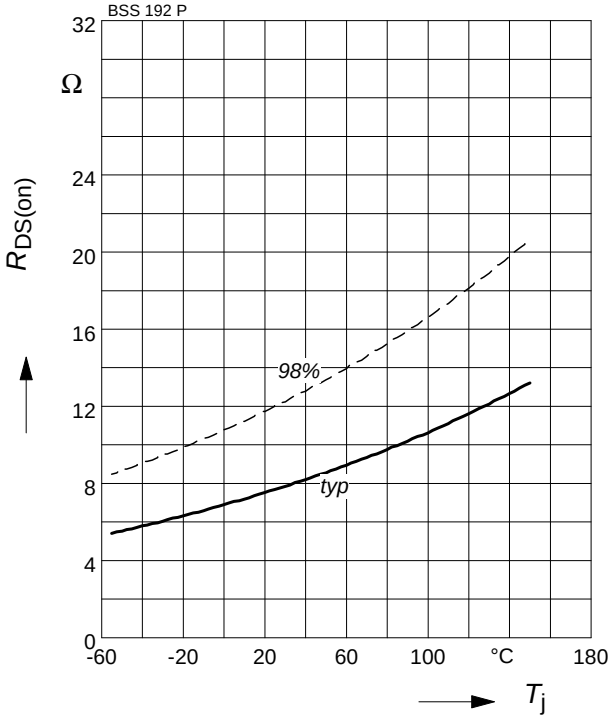
parameter: T_j =25°C



9 Drain-source on-state resistance

$R_{DS(on)} = f(T_j)$

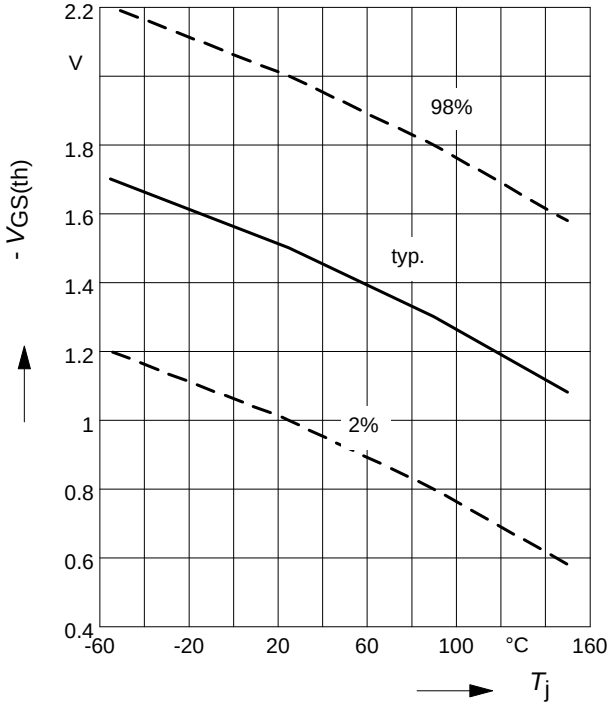
parameter : I_D = -0.19 A, V_{GS} = -10 V



10 Typ. gate threshold voltage

$V_{GS(th)} = f(T_j)$

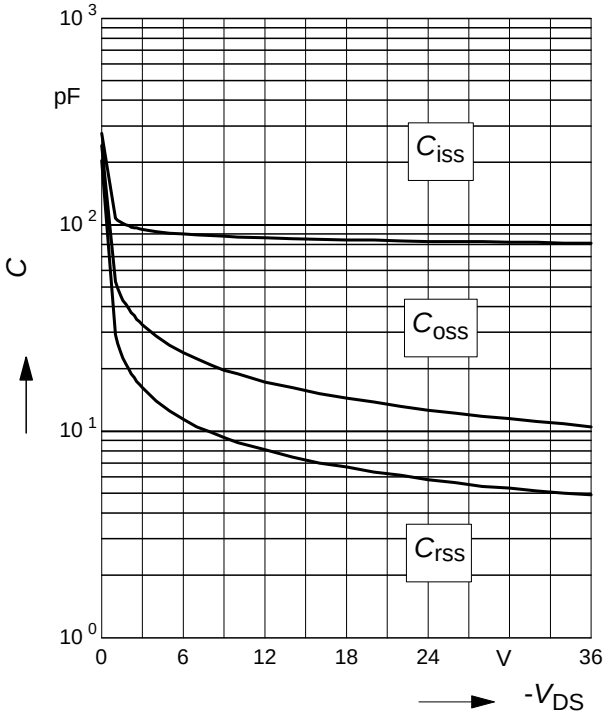
parameter: $V_{GS} = V_{DS}$



11 Typ. capacitances

$C = f(V_{DS})$

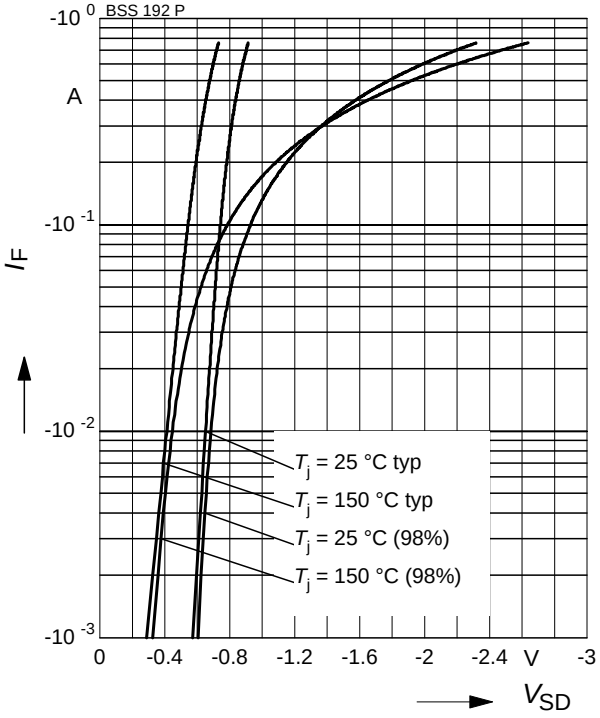
parameter: V_{GS}=0, f=1 MHz, T_j = 25 °C



12 Forward character. of reverse diode

$I_F = f(V_{SD})$

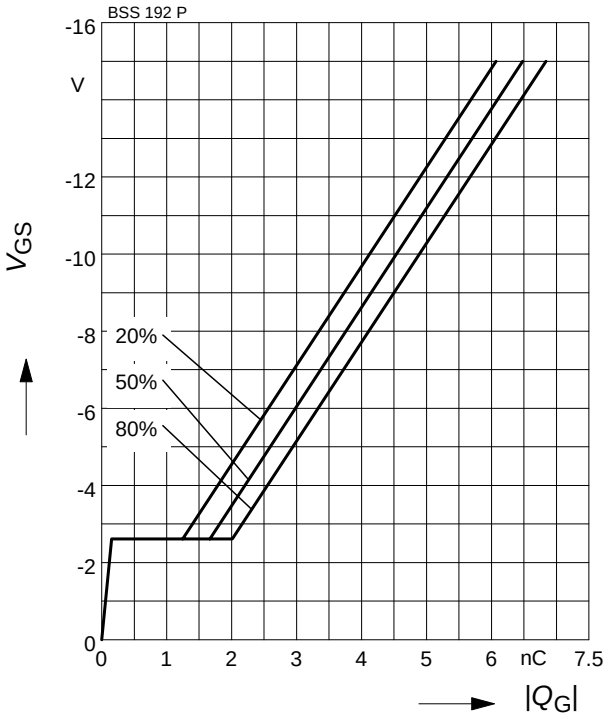
parameter: T_j



13 Typ. gate charge

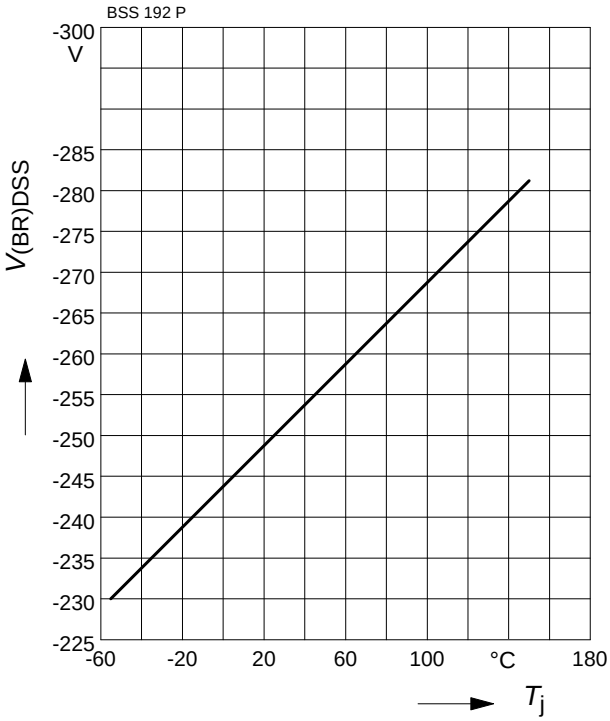
$V_{GS} = f\ (Q_{Gate})$

parameter: I_D = -0.19 A pulsed, T_j = 25 °C



14 Drain-source breakdown voltage

$V_{(BR)DSS} = f\ (T_j)$



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- Поставка более 17-ти миллионов наименований электронных компонентов;
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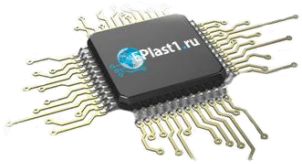
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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