Ordering number:ENN5620B

N-Channel Silicon MOSFET

2SK2616

Ultrahigh-Speed Switching Applications

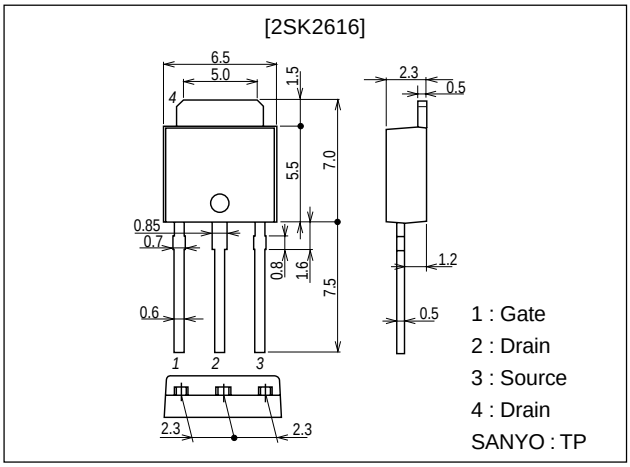
Features

- Low ON-resistance.
- Low Qg.

Package Dimensions

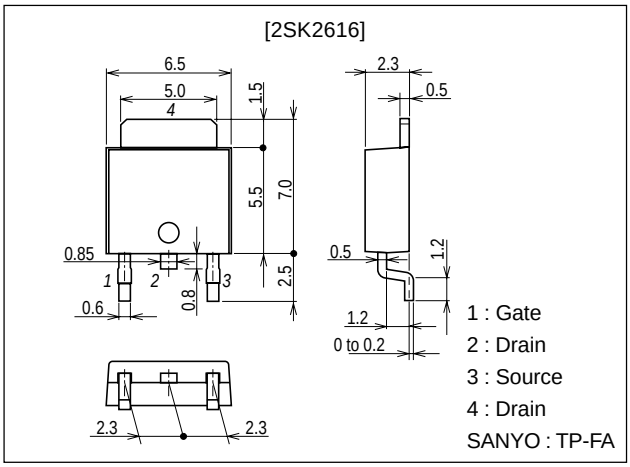
unit:mm

2083B



unit:mm

2092B



SANYO Electric Co.,Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Specifications

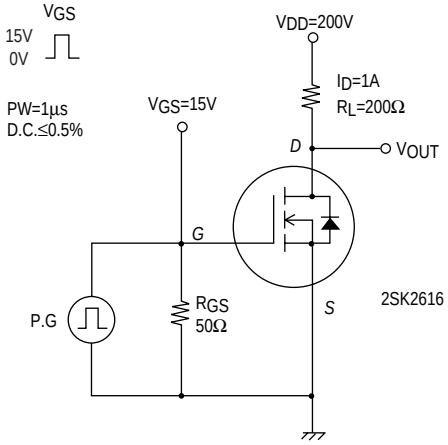
Absolute Maximum Ratings at Ta = 25˚C

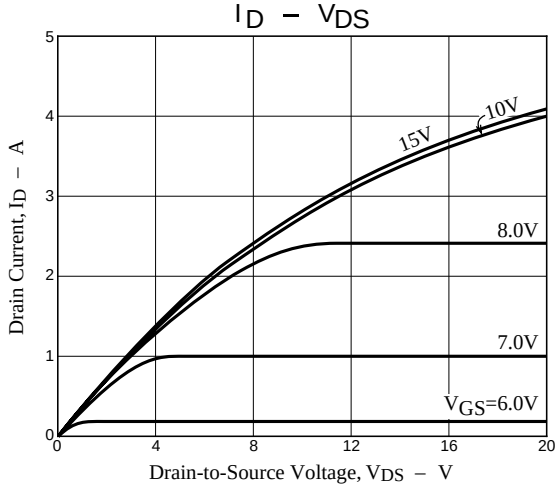
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		500	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_D		2	A
Drain Current (Pulse)	I_{DP}		8	A
Allowable Power Dissipation	P_D		1	W
		Tc=25˚C	30	W
Channel Temperature	Tch		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

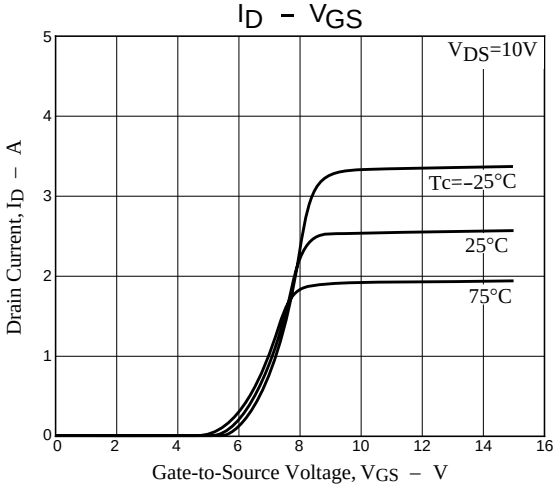
Electrical Characteristics at Ta = 25˚C

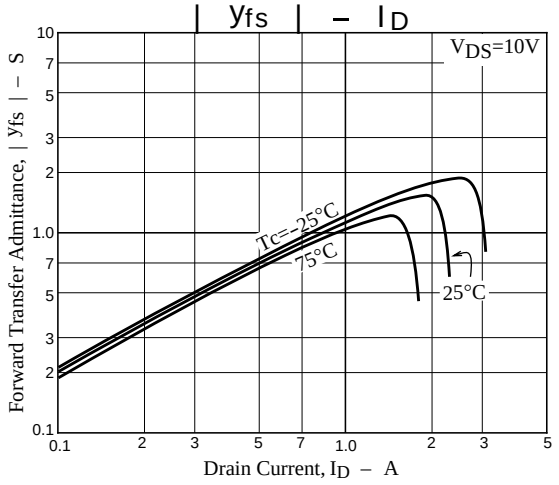
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0	500			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V, V_{GS}=0			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0			±100	nA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=10V, I_D=1mA	3.5		5.5	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=1A	0.55	1.1		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	I_D=1A, V_{GS}=15V		3.0	4.0	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		300		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		100		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		50		pF
Total Gate Charge	Qg	V_{DS}=200V, I_D=2A, V_{GS}=10V		8		nC
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		13		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		20		ns
Fall Time	t_f	See specified Test Circuit		17		ns
Diode Forward Voltage	V_{SD}	I_S=2A, V_{GS}=0			1.2	V

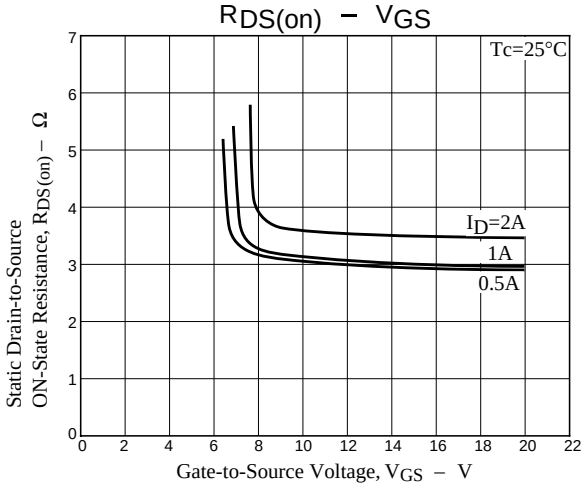
Switching Time Test Circuit

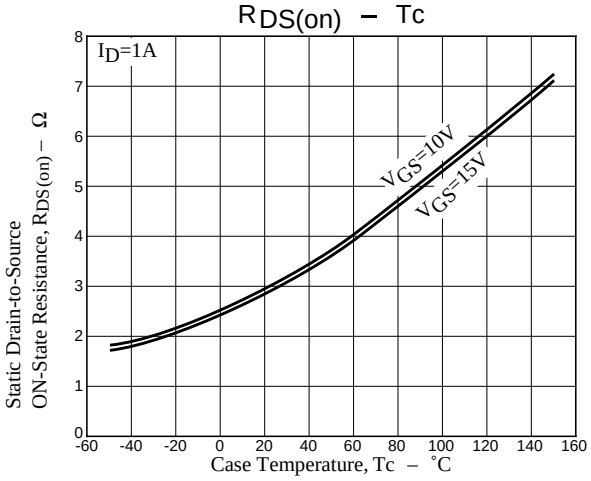


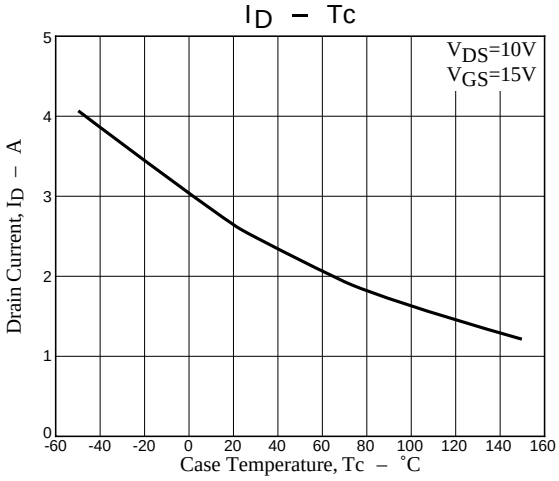

I_D – V_{DS}
Drain Current, I_D – A
Drain-to-Source Voltage, V_{DS} – V
15V
10V
8.0V
7.0V
V_{GS}=6.0V

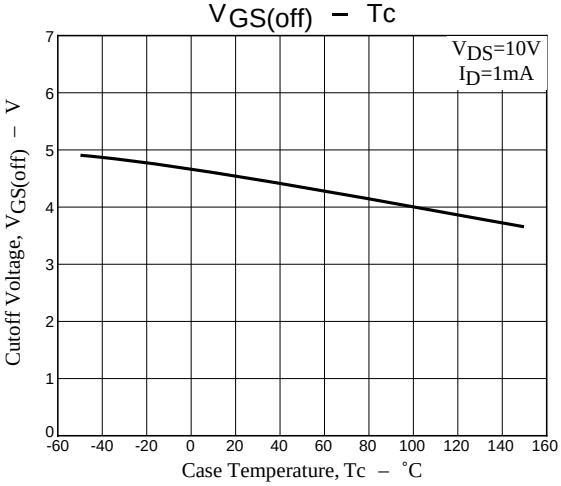

I_D – V_{GS}
Drain Current, I_D – A
Gate-to-Source Voltage, V_{GS} – V
V_{DS}=10V
Tc=–25°C
25°C
75°C

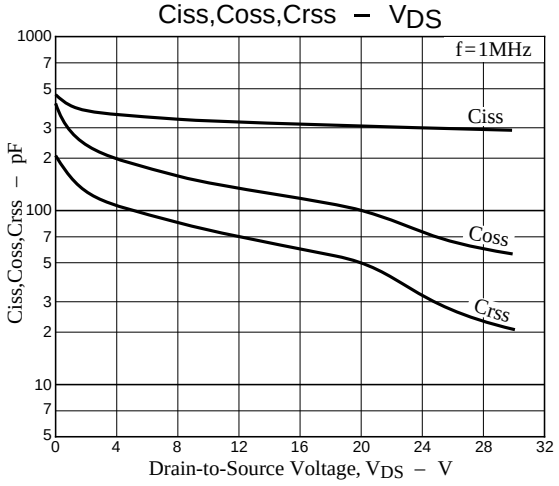

| yfs | – I_D
Forward Transfer Admittance, | yfs | – S
Drain Current, I_D – A
V_{DS}=10V
Tc=–25°C
75°C
25°C


$R_{DS(on)}$ – V_{GS}
Static Drain-to-Source
ON-State Resistance, $R_{DS(on)}$ – Ω
Gate-to-Source Voltage, V_{GS} – V
Tc=25°C
I_D=2A
1A
0.5A

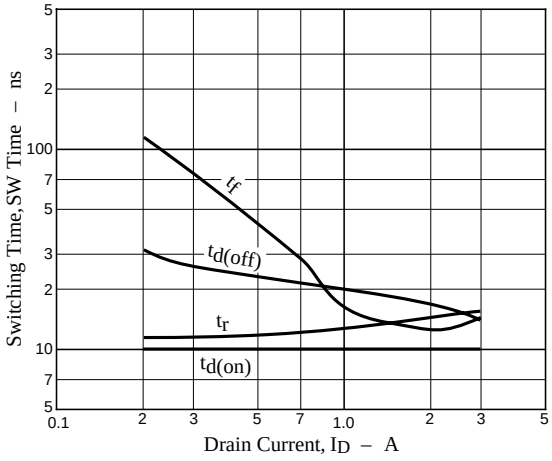

$R_{DS(on)}$ – Tc
Static Drain-to-Source
ON-State Resistance, $R_{DS(on)}$ – Ω
Case Temperature, Tc – ˚C
I_D=1A
V_{GS}=10V
V_{GS}=15V


I_D – Tc
Drain Current, I_D – A
Case Temperature, Tc – ˚C
V_{DS}=10V
V_{GS}=15V

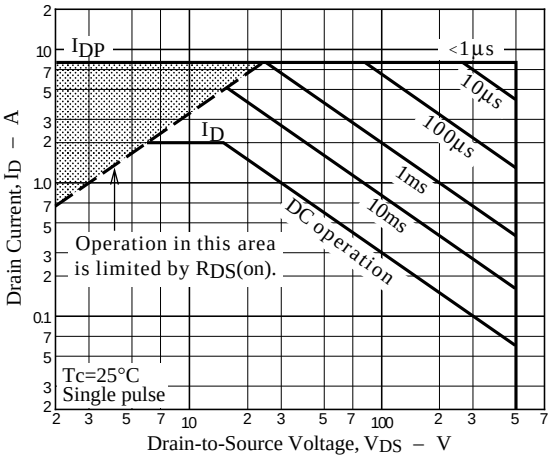

$V_{GS(off)}$ – Tc
Cutoff Voltage, $V_{GS(off)}$ – V
Case Temperature, Tc – ˚C
V_{DS}=10V
I_D=1mA


Ciss,Coss,Crss – V_{DS}
Ciss,Coss,Crss – pF
Drain-to-Source Voltage, V_{DS} – V
f=1MHz
Ciss
Coss
Crss

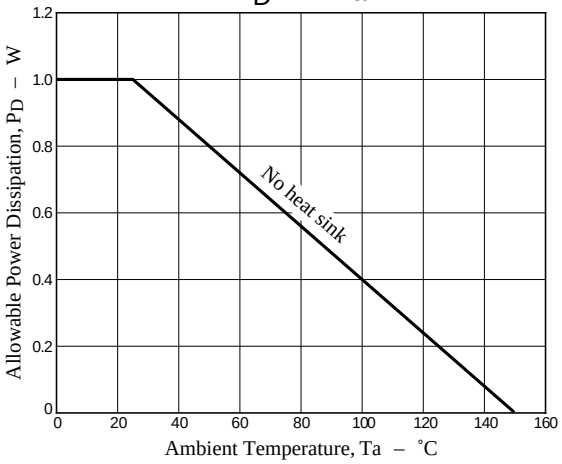
SW Time – I_D



A S O



P_D – Ta



P_D – Tc