Ordering number : ENN6783

N-Channel Silicon MOSFET

2SK2682

SANYO

Ultrahigh-Speed Switching Applications

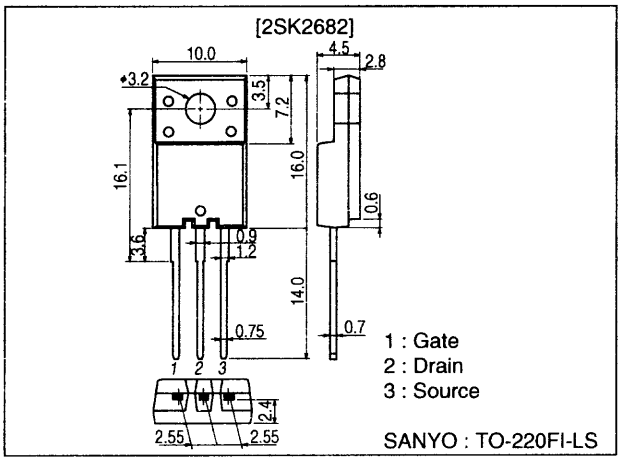
Features

- Low ON-resistance.
- High-speed diode.
- Micaless package facilitating mounting.

Package Dimensions

unit : mm

2078B



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		250	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_D		13	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	52	A
Allowable Power Dissipation	P_D		2	W
		Tc=25°C	35	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	250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100μA, V_{GS}=0	±30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=250V, V_{GS}=0			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±25V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=10V, I_D=1mA	2.0		3.0	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=6A	6	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	I_D=6A, V_{GS}=10V		200	270	mΩ

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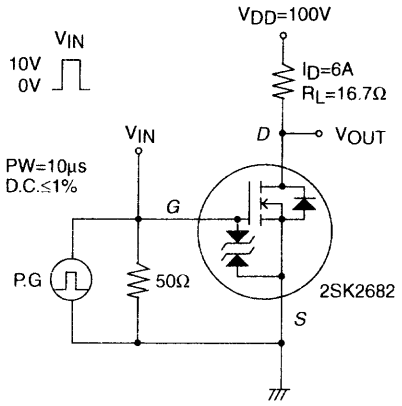
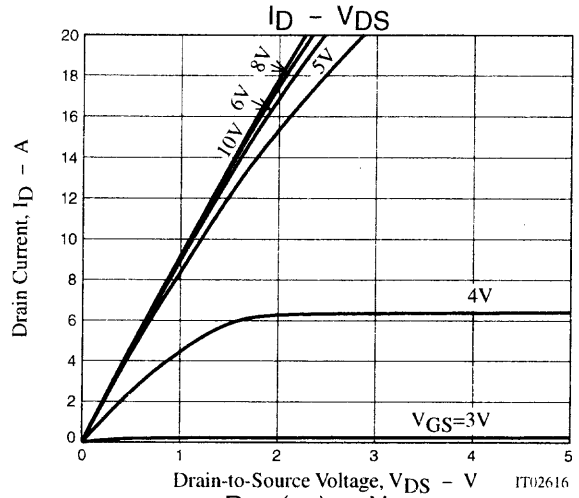
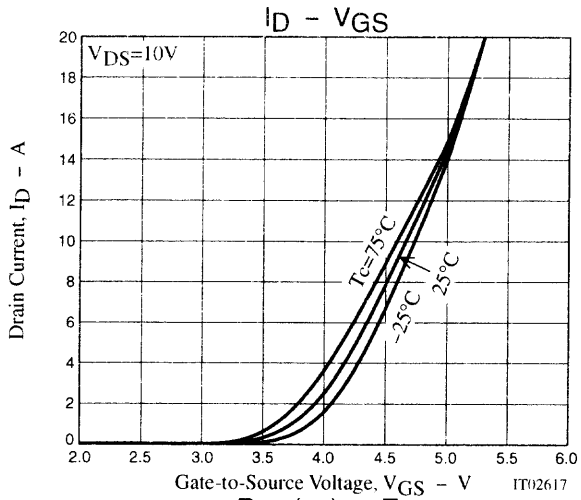
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		1290		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		300		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		125		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit		22		ns
Rise Time	t_{r}	See specified Test Circuit		66		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit		320		ns
Fall Time	t_{f}	See specified Test Circuit		105		ns
Diode Forward Voltage	V_{SD}	I_S=12A, V_{GS}=0		1.0	1.5	V
Diode Reverse Recovery Time	t_{rr}	IS=12A, di/dt=100A/μs		160		ns

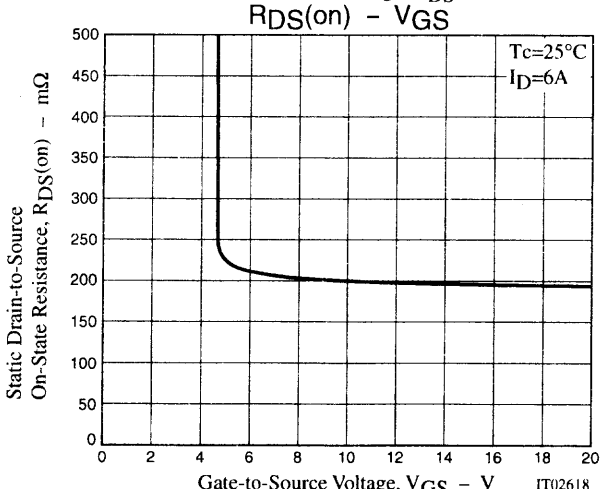
Marking : K2682

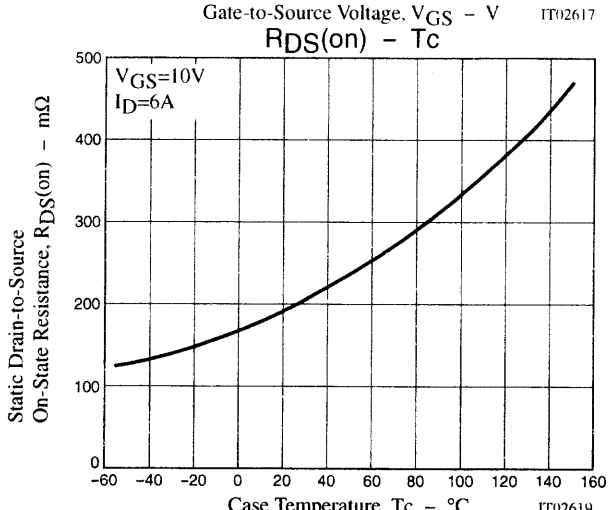
Switching Time Test Circuit

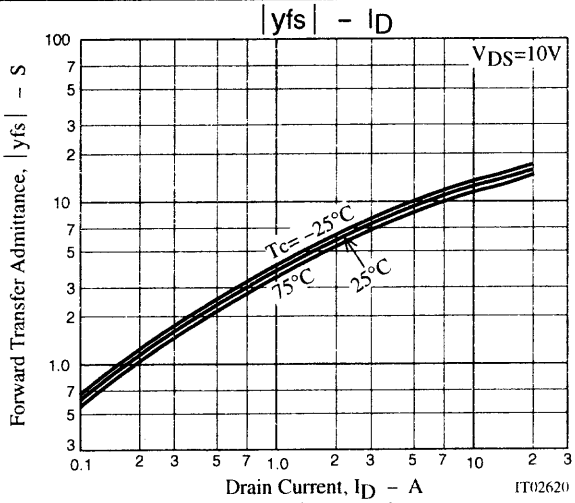


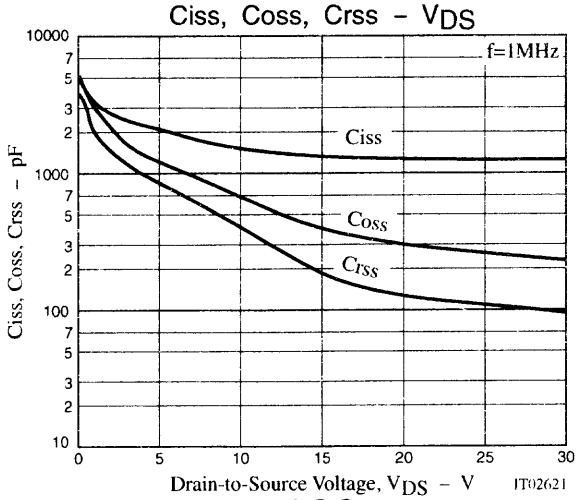


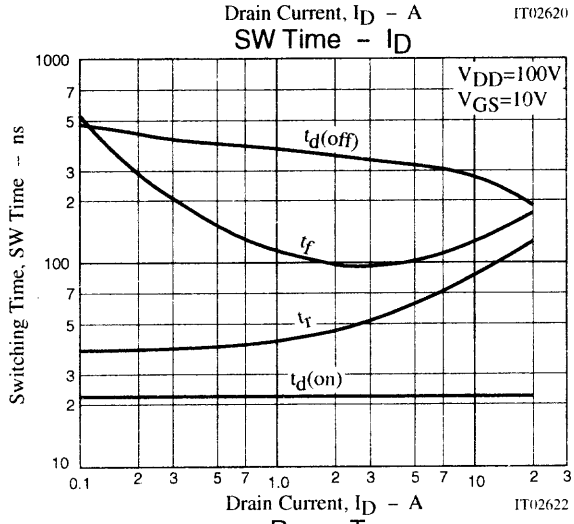


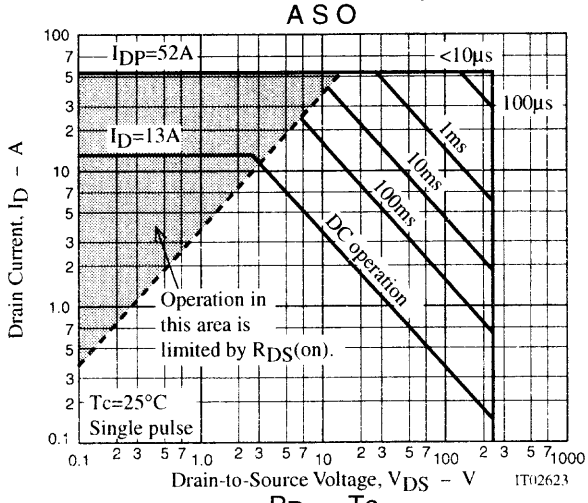


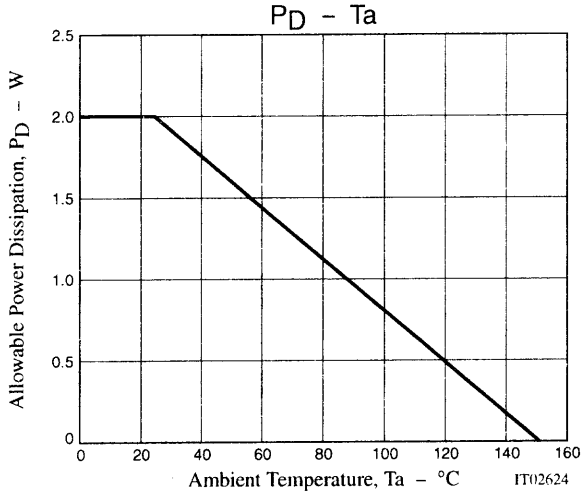


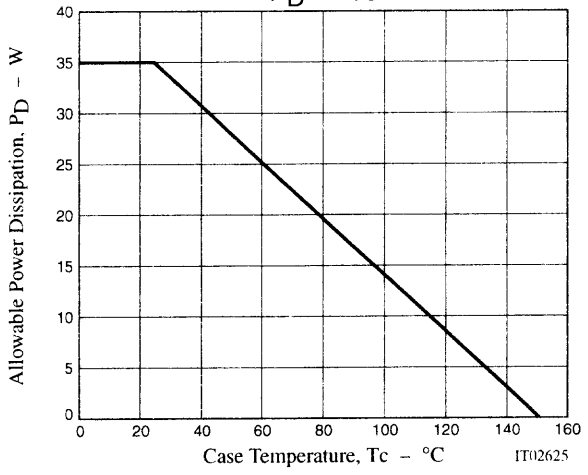

|yfs| - ID
VDS=10V
Tc= -25°C
75°C
25°C
Forward Transfer Admittance, |yfs| - S
Drain Current, ID - A
IT02620


Ciss, Coss, Crss - VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss - pF
Drain-to-Source Voltage, VDS - V
IT02621


SW Time - ID
VDD=100V
VGS=10V
td(off)
tf
tr
td(on)
Switching Time, SW Time - ns
Drain Current, ID - A
IT02622


A S O
IDP=52A
ID=13A
<10µs
100µs
1ms
10ms
100ms
DC operation
Operation in
this area is
limited by RDS(on).
Tc=25°C
Single pulse
Drain Current, ID - A
Drain-to-Source Voltage, VDS - V
IT02623


PD - Ta
Allowable Power Dissipation, PD - W
Ambient Temperature, Ta - °C
IT02624


PD - Tc
Allowable Power Dissipation, PD - W
Case Temperature, Tc - °C
IT02625