Ordering number:EN4885

FX602

N-Channel Silicon MOSFET

Ultrahigh-Speed Switching Applications

Features

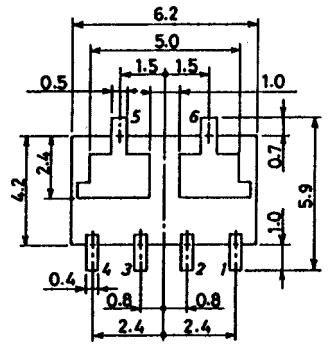
- Composite type composed of two low ON-resistance N-channel MOSFET chips for ultrahigh-speed switching and low-voltage drive.
- Facilitates high-density mounting.
- The FX602 is formed with two chips, each being equivalent to the 2SK2152, placed in one package.
- Matched pair characteristics.

Package Dimensions

unit:mm

2120

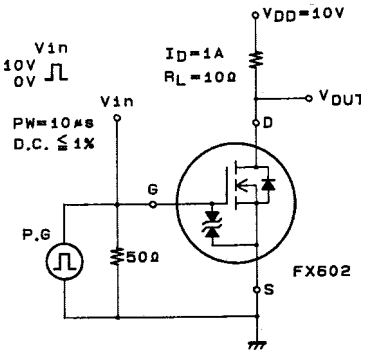
[FX602]



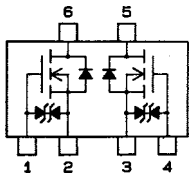
1:Gate1
2:Source1
3:Source2
4:Gate2
5:Drain2
6:Drain1

SANYO:XP6
(Bottom view)

Switching Time Test CIrcuit



Electrical Connection



1:Gate1
2:Source1
3:Source2
4:Gate2
5:Drain2
6:Drain1

(Top view)

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		±15	V
Drain Current (DC)	I_D		2	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	8	A
Allowable Power Dissipation	P_D	Tc=25˚C, 1unit	6	W
	P_D	Mounted on ceramic board (750mm²×0.8mm) 1unit	1.5	W
Total Dissipation	P_T	Mounted on ceramic board (750mm²×0.8mm)	2	W
Channel Temperature	Tch		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

- Marking:602

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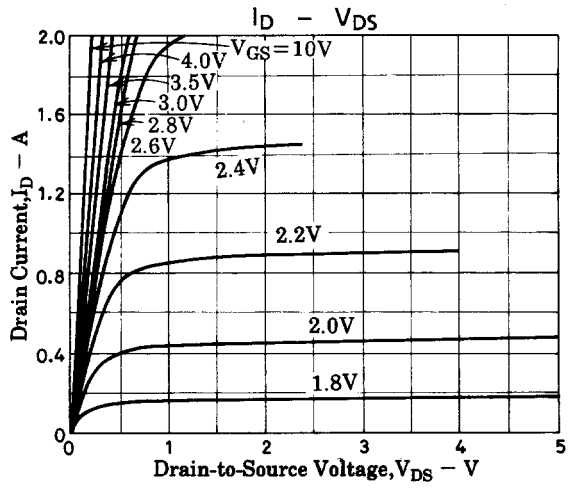
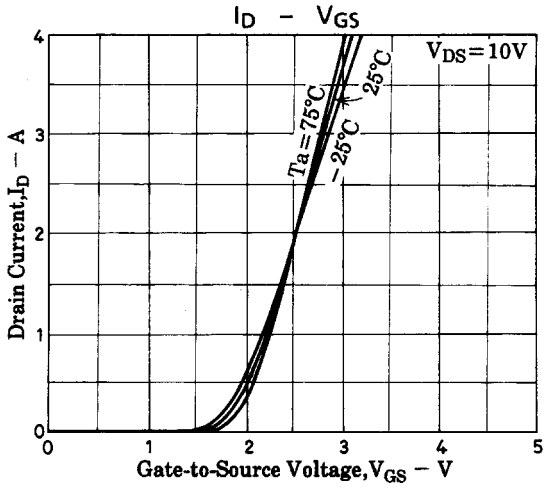
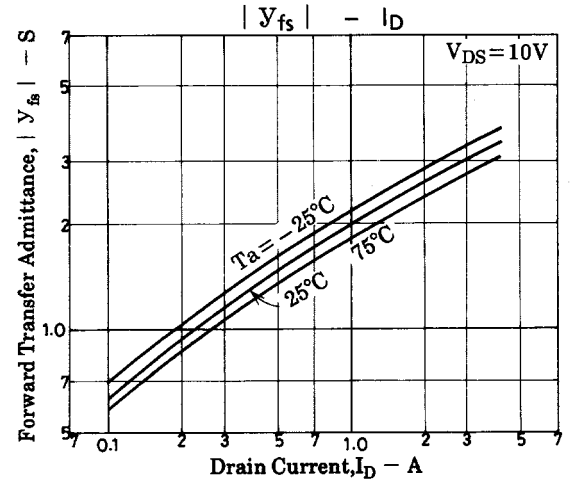
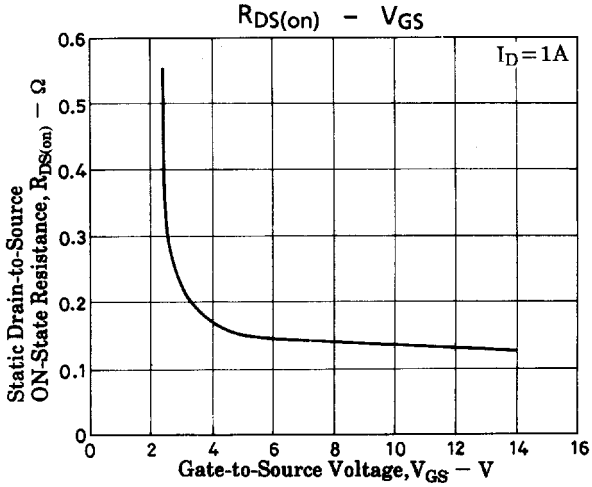
Electrical Characteristics at Ta = 25˚C

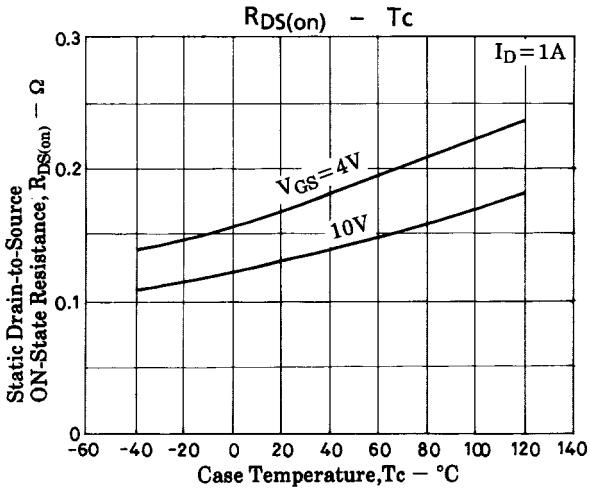
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0	20			V
G-S Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100µA, V_{DS}=0	±15			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0			100	µA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±12, V_{DS}=0			±10	µA
Cutoff Voltage	$V_{GS(off)}$	V_{GS}=10V, I_D=1mA	0.8		2.0	V
Forward Transfer Admittance	$\lvert Y_{fs} \rvert$	V_{DS}=10V, I_D=1A	1.2	2		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	I_D=1A, V_{GS}=10V		130	180	mΩ
	$R_{DS(on)}$	I_D=1A, V_{GS}=4V		170	250	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		170		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		145		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		50		pF
Turn-ON Delay Time	$t_{d(on)}$	See Specified Test Circuit		10		ns
Rise Time	t_r	See Specified Test Circuit		12		ns
Turn-OFF Delay Time	$t_{d(off)}$	See Specified Test Circuit		50		ns
Fall Time	t_f	See Specified Test Circuit		35		ns
Diode Forward Voltage	V_{SD}	I_S=2A, V_{GS}=0		1.0		V

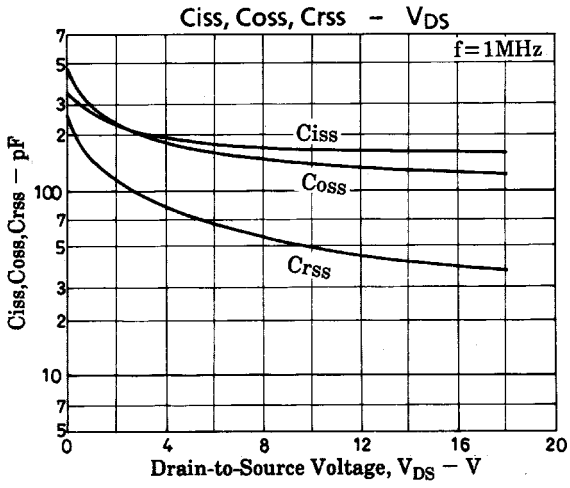

I_D – V_{DS}
V_{GS}=10V
4.0V
3.5V
3.0V
2.8V
2.6V
2.4V
2.2V
2.0V
1.8V
Drain Current, I_D – A
Drain-to-Source Voltage, V_{DS} – V

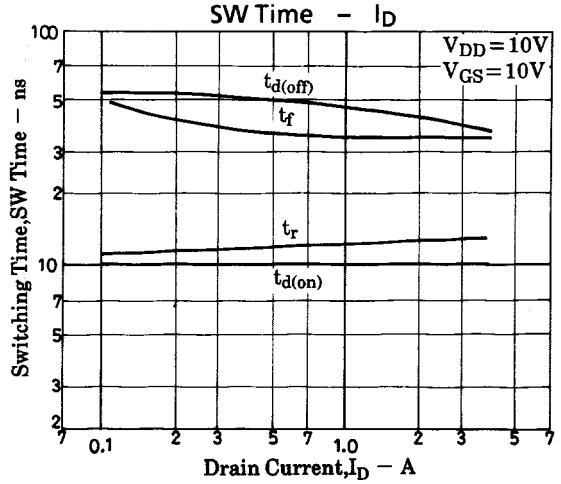

I_D – V_{GS}
V_{DS}=10V
Ta=75°C
25°C
–25°C
Drain Current, I_D – A
Gate-to-Source Voltage, V_{GS} – V

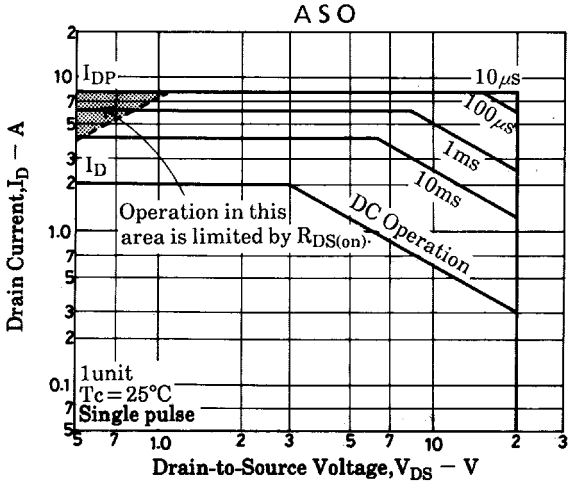

| y_{fs} | – I_D
V_{DS}=10V
Ta=–25°C
25°C
75°C
Forward Transfer Admittance, | y_{fs} | – S
Drain Current, I_D – A


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


$R_{DS(on)}$ – Tc
I_D=1A
V_{GS}=4V
10V
Static Drain-to-Source ON-State Resistance, $R_{DS(on)}$ – Ω
Case Temperature, Tc – °C


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


SW Time – I_D
V_{DD}=10V
V_{GS}=10V
$t_{d(off)}$
t_f
t_r
$t_{d(on)}$
Switching Time, SW Time – ns
Drain Current, I_D – A


A S O
I_{DP}
I_D
10μs
100μs
1ms
10ms
DC Operation
Operation in this area is limited by $R_{DS(on)}$.
1unit
Tc=25°C
Single pulse
Drain Current, I_D – A
Drain-to-Source Voltage, V_{DS} – V