Ordering number : ENN8398

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

EC4307KF — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 1.8V drive.
- mounting height : 0.4mm.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−12	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		−1.1	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−4.4	A
Allowable Power Dissipation	P_D	Mounted on a glass-epoxy board	0.4	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}=0V	−12			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V, V_{GS}=0V			−10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=-6V, I_D=-1mA	-0.3		-1.0	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=-6V, I_D=-0.5A	0.9	1.5		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=-0.5A, V_{GS}=-4.5V		250	327	mΩ
	R_{DS}(on)2	I_D=-0.2A, V_{GS}=-2.5V		380	528	mΩ
	R_{DS}(on)3	I_D=-0.1A, V_{GS}=-1.8V		520	740	mΩ
Input Capacitance	Ciss	V_{DS}=-6V, f=1MHz		160		pF
Output Capacitance	Coss	V_{DS}=-6V, f=1MHz		45		pF
Reverse Transfer Capacitance	Crss	V_{DS}=-6V, f=1MHz		35		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		20		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		32		ns
Fall Time	t_f	See specified Test Circuit.		30		ns

Continued on next page.

SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

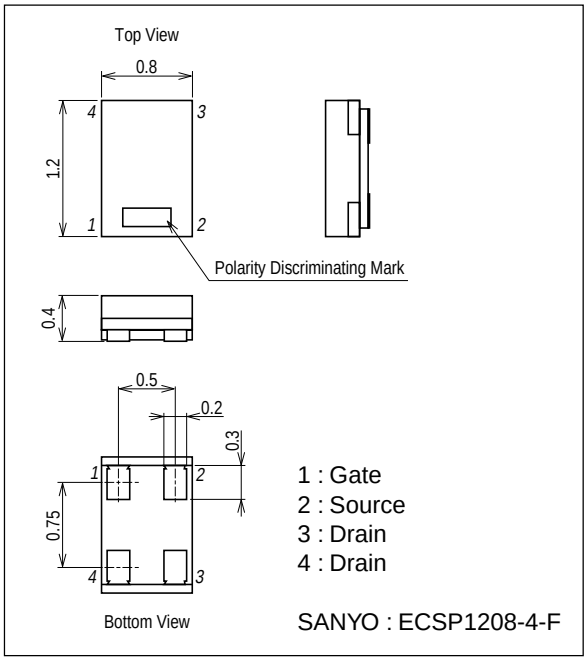
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-1.1A		2.6		nC
Gate-to-Source Charge	Qgs	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-1.1A		0.25		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-1.1A		0.65		nC
Diode Forward Voltage	V_{SD}	I_S=-1.1A, V_{GS}=0V		-0.9	-1.2	V

Package Dimensions

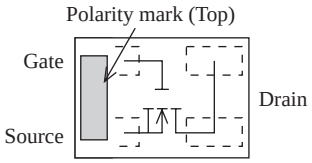
unit : mm

7043-001



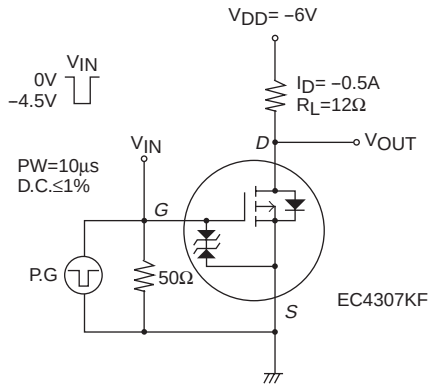
Type No. Indication(Top view)

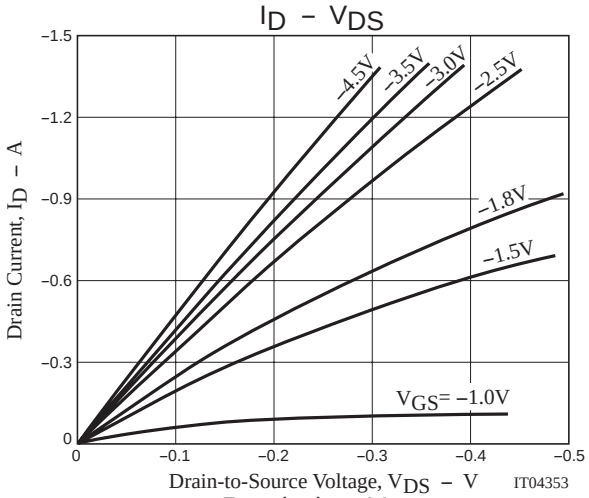
Electrical Connection(Top view)

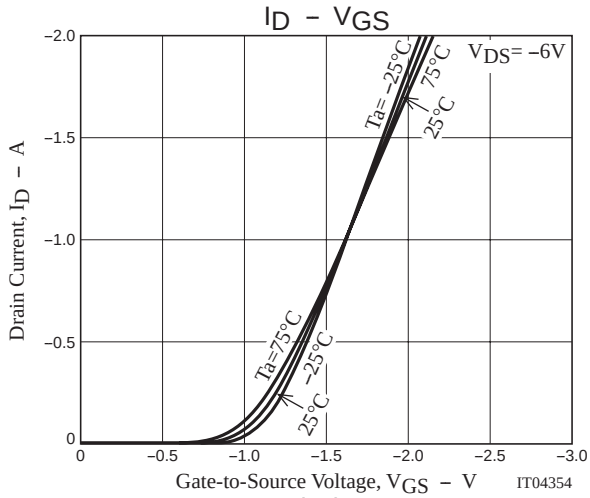


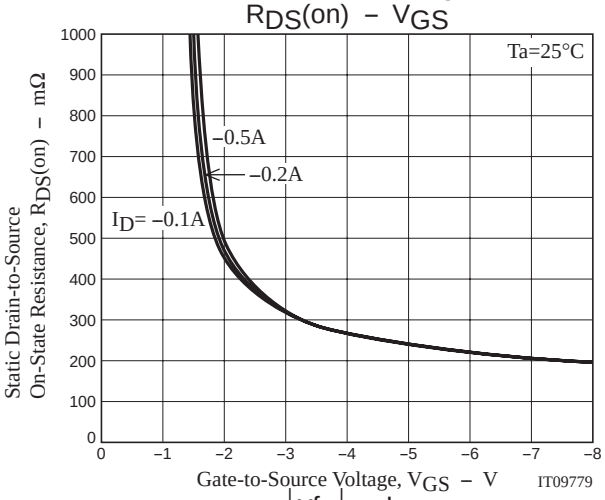
*Electrodes : on the bottom

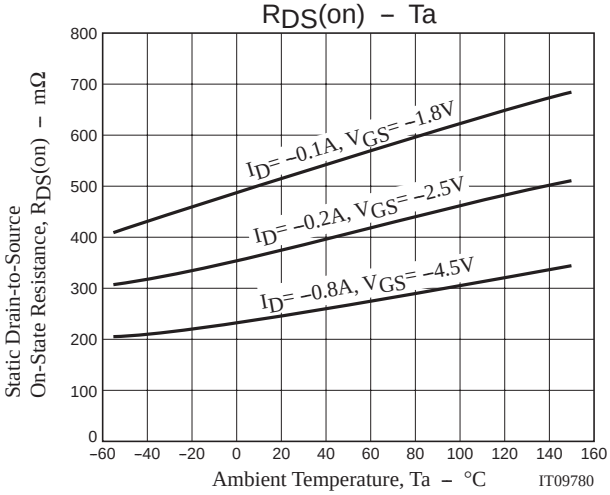
Switching Time Test Circuit

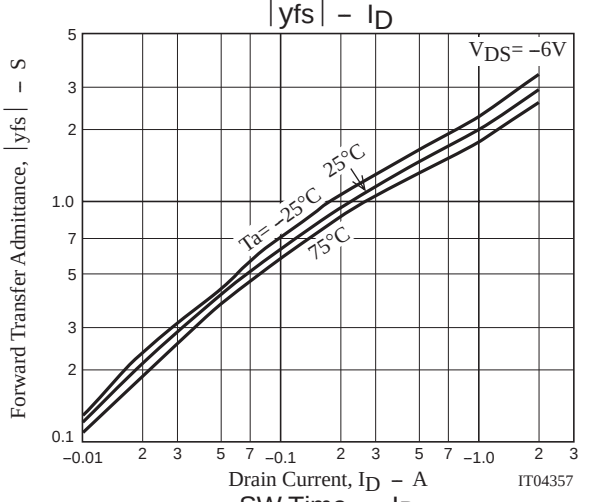


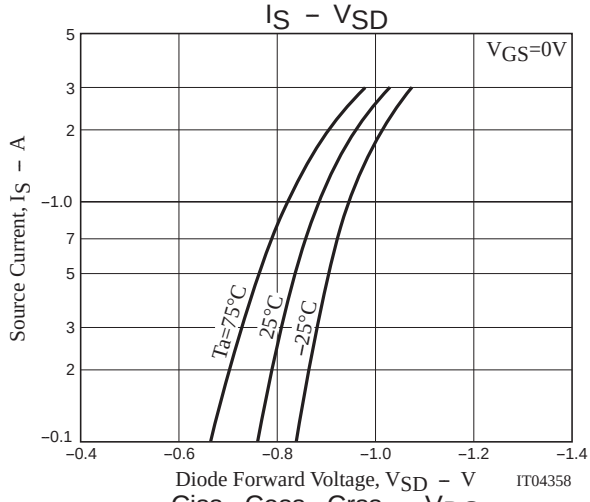

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT04353
–4.5V
–3.5V
–3.0V
–2.5V
–1.8V
–1.5V
VGS= –1.0V

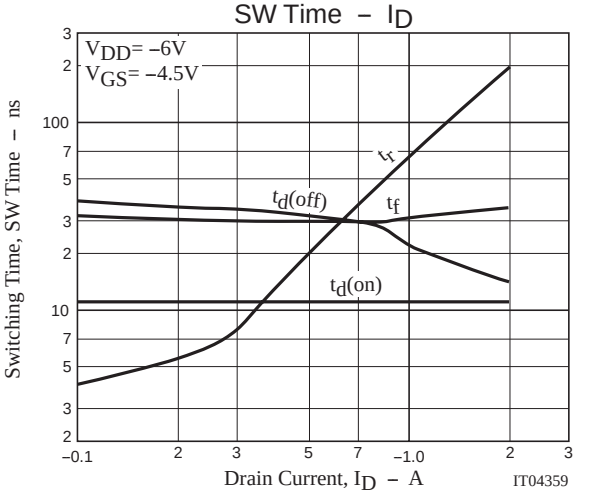

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT04354
VDS= –6V
Ta= –25°C
75°C
25°C
Ta=75°C
–25°C
25°C

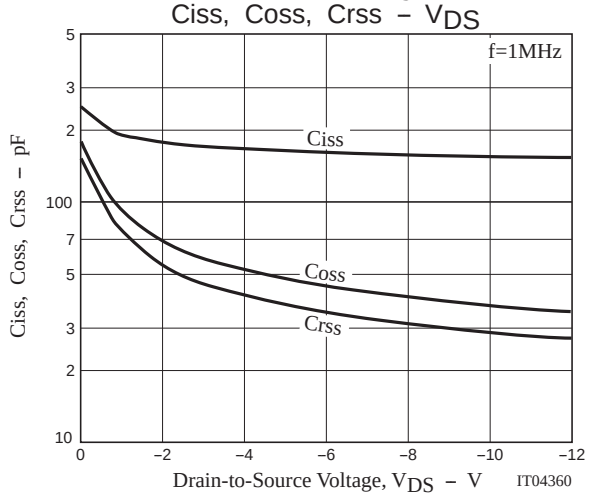

RDS(on) – VGS
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT09779
Ta=25°C
–0.5A
–0.2A
ID= –0.1A

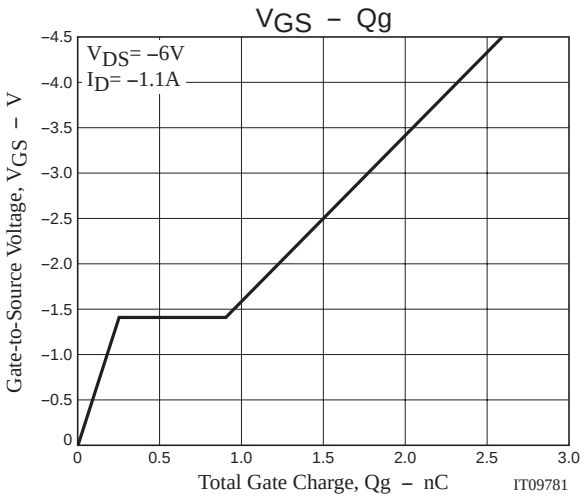

RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT09780
ID= –0.1A, VGS= –1.8V
ID= –0.2A, VGS= –2.5V
ID= –0.8A, VGS= –4.5V

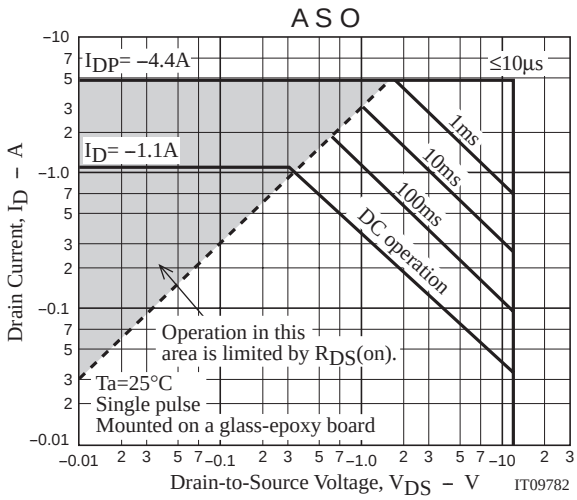

|yfs| – ID
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT04357
VDS= –6V
Ta= –25°C
25°C
75°C

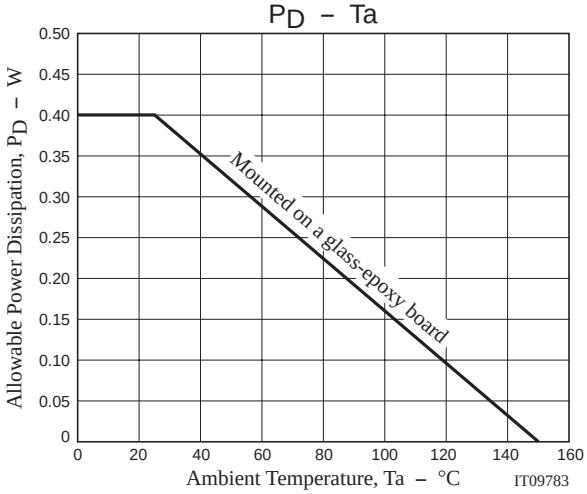

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT04358
VGS=0V
Ta=75°C
25°C
–25°C


SW Time – ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT04359
VDD= –6V
VGS= –4.5V
tr
td(off)
tf
td(on)


Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT04360
f=1MHz
Ciss
Coss
Crss







Note on usage : Since the EC4307KF is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.