



SANYO Semiconductors

DATA SHEET

EC4307KF — General-Purpose Switching Device Applications

P-Channel Silicon MOSFET

Features

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

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

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}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$		-4.4	A
Allowable Power Dissipation	P_D	Mounted on a glass-epoxy board		0.4	W
Channel Temperature	T_{ch}			150	$^\circ\text{C}$
Storage Temperature	T_{stg}			-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0\text{V}$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12\text{V}$, $V_{GS} = 0\text{V}$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS} = -6\text{V}$, $I_D = -1\text{mA}$	-0.3		-1.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6\text{V}$, $I_D = -0.5\text{A}$	0.9	1.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})1}$	$I_D = -0.5\text{A}$, $V_{GS} = -4.5\text{V}$		250	327	$\text{m}\Omega$
	$R_{DS(\text{on})2}$	$I_D = -0.2\text{A}$, $V_{GS} = -2.5\text{V}$		380	528	$\text{m}\Omega$
	$R_{DS(\text{on})3}$	$I_D = -0.1\text{A}$, $V_{GS} = -1.8\text{V}$		520	740	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -6\text{V}$, $f = 1\text{MHz}$		160		pF
Output Capacitance	C_{oss}	$V_{DS} = -6\text{V}$, $f = 1\text{MHz}$		45		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -6\text{V}$, $f = 1\text{MHz}$		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

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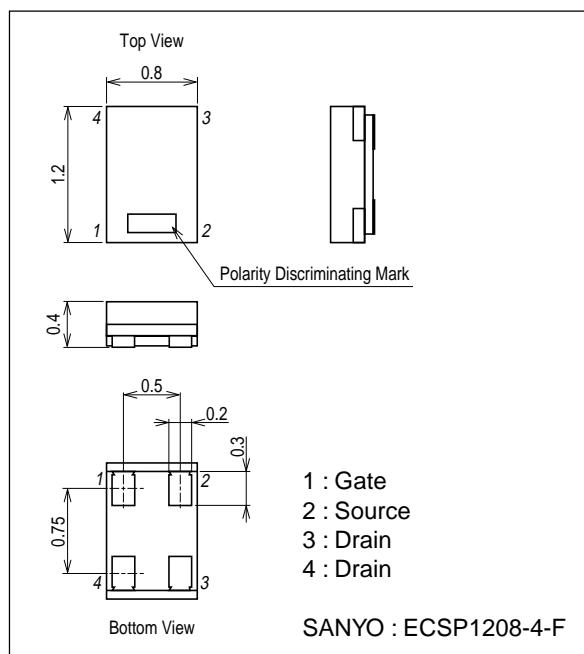
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-1.1A$		2.6		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-1.1A$		0.25		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-6V,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

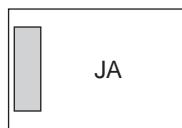
Package Dimensions

unit : mm

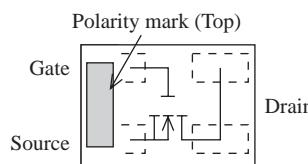
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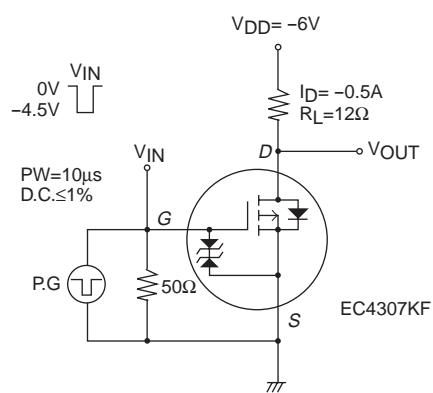
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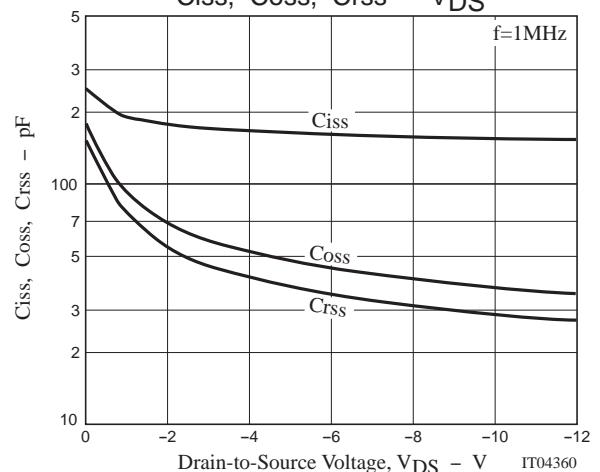
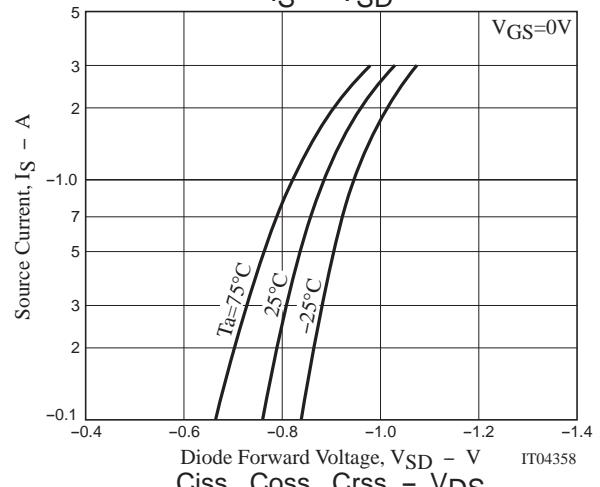
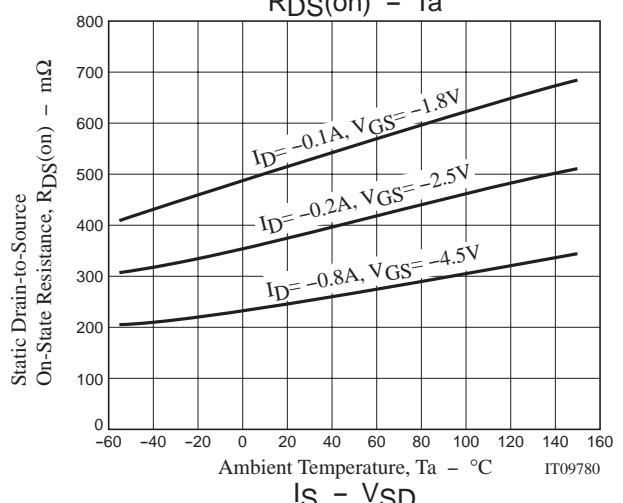
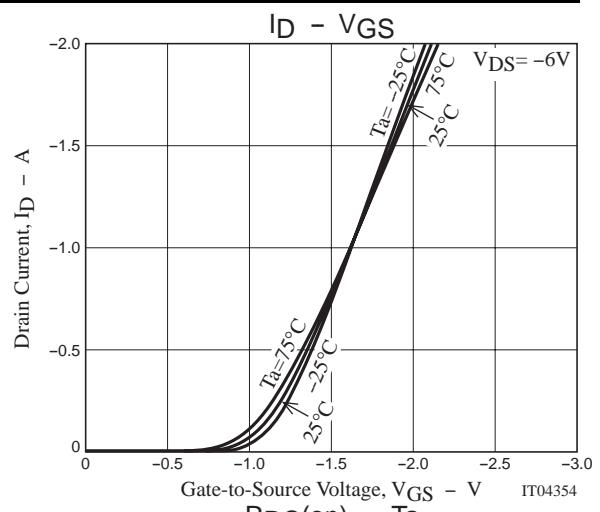
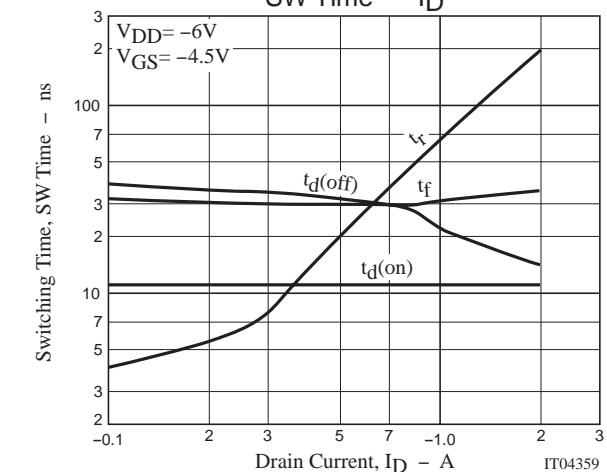
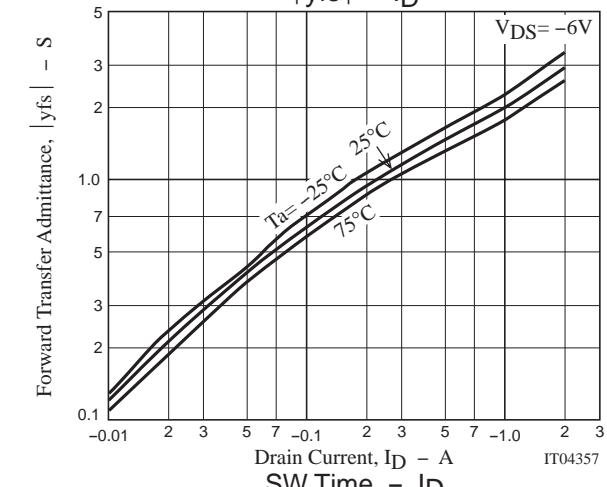
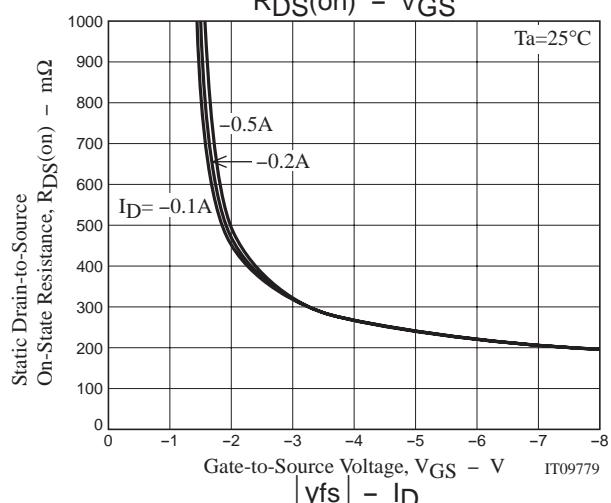
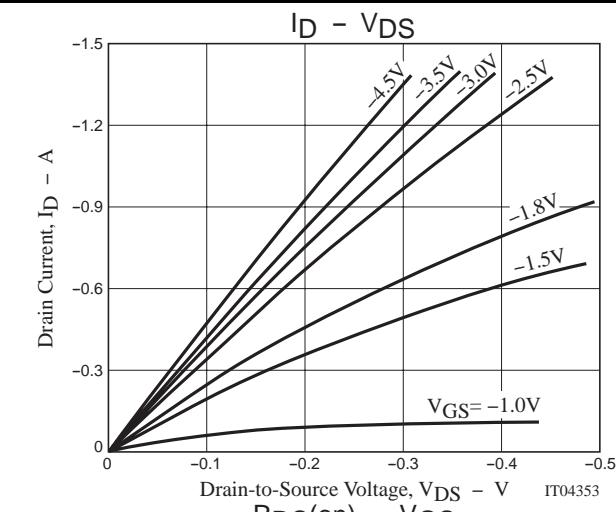


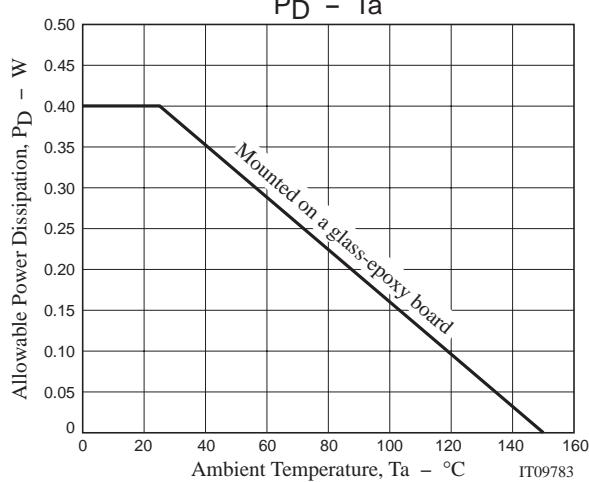
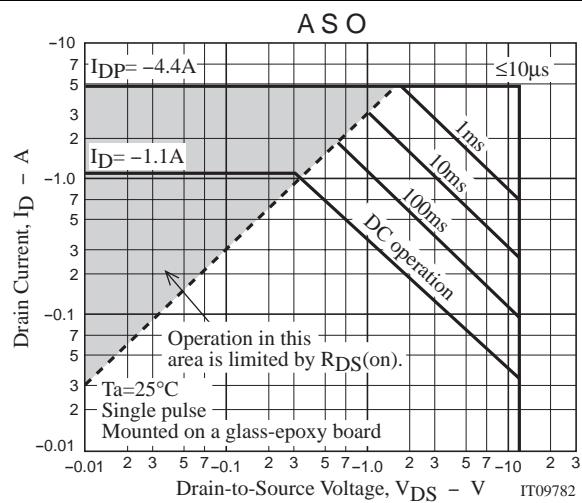
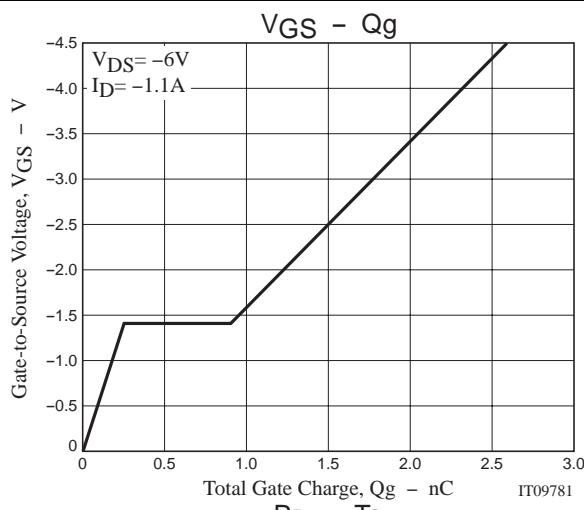
Electrical Connection (Top view)



Switching Time Test Circuit







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

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