



General-Purpose Switching Device Applications

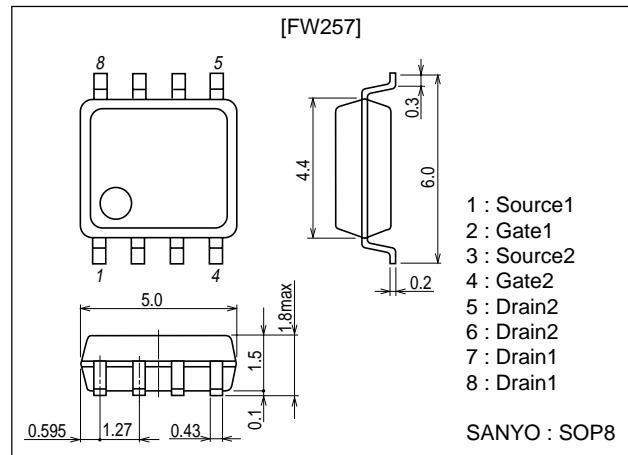
Preliminary

Features

- Motor drive.
- 4V drive.

Package Dimensions

unit : mm
2129



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		100	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		2	A
Drain Current (PW≤10s)	I _D	duty cycle≤1%	2.5	A
Drain Current (PW≤100ms)	I _D	duty cycle≤1%	5	A
Drain Current (PW≤10μs)	I _{DP}	duty cycle≤1%	8	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1200mm ² ×0.8mm) 1unit (PW≤10s)	1.4	W
Total Dissipation	P _T	Mounted on a ceramic board (1200mm ² ×0.8mm) (PW≤10s)	2.0	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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	100			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =1A	1.8	3		S

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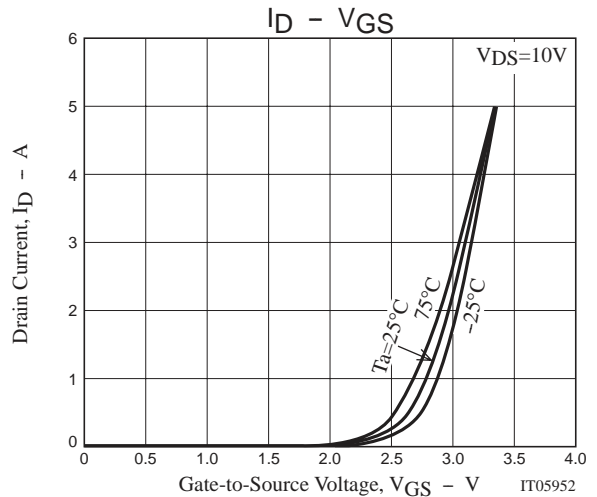
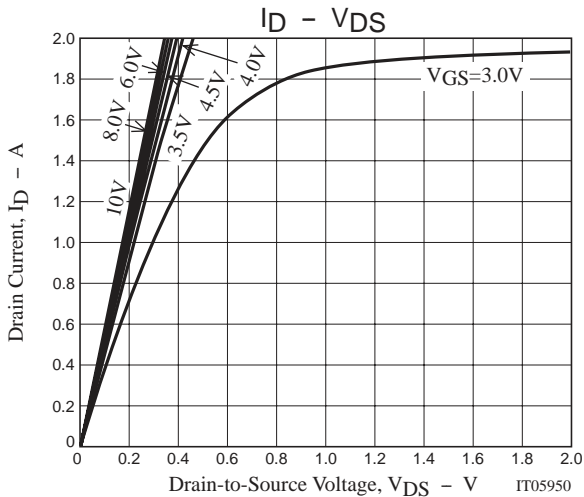
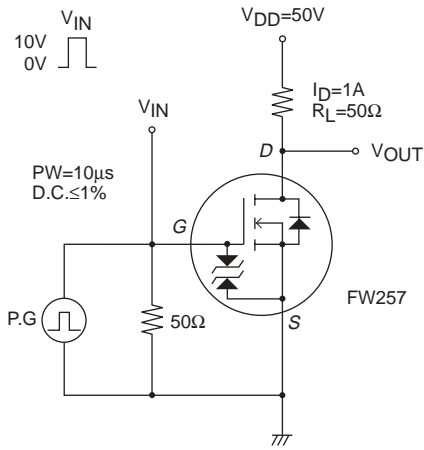
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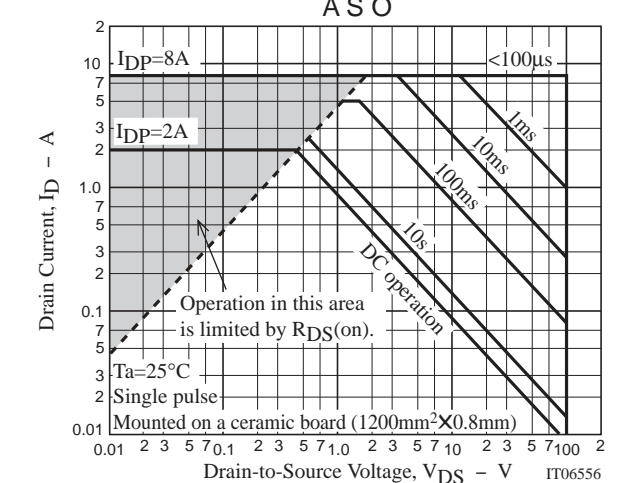
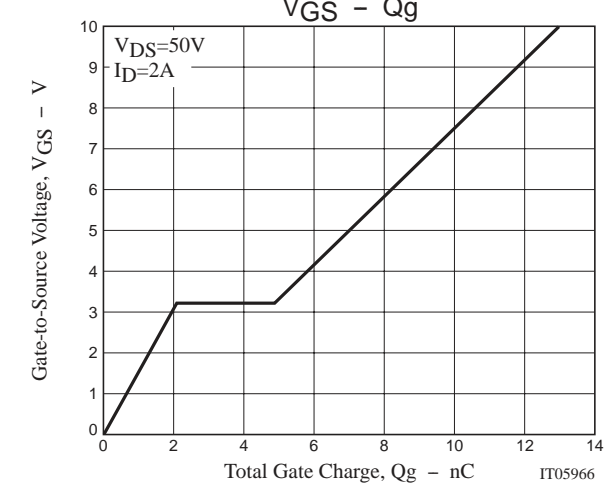
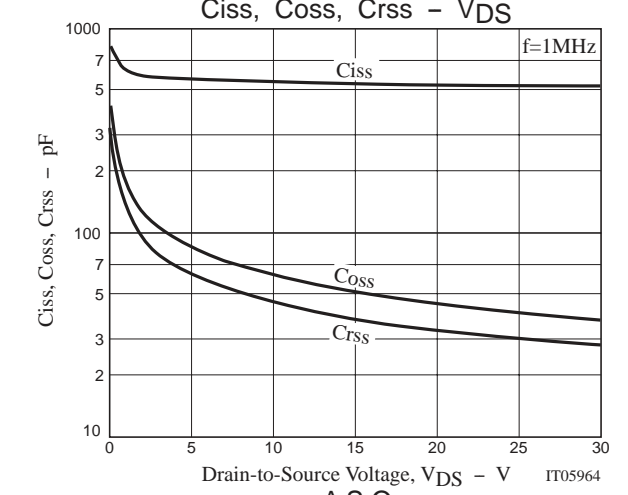
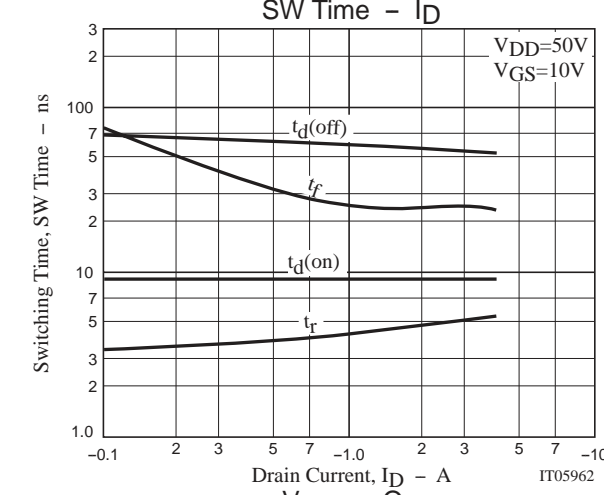
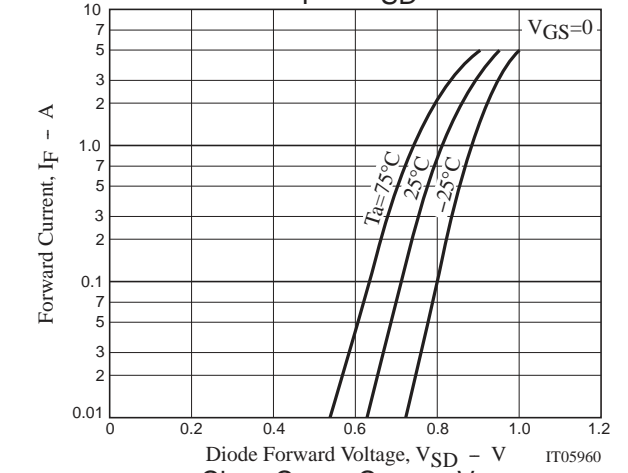
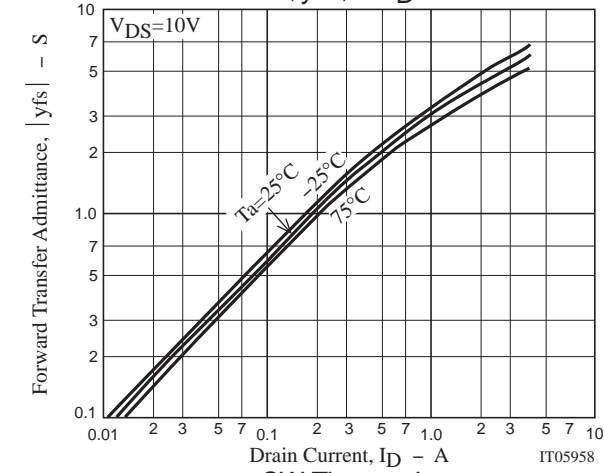
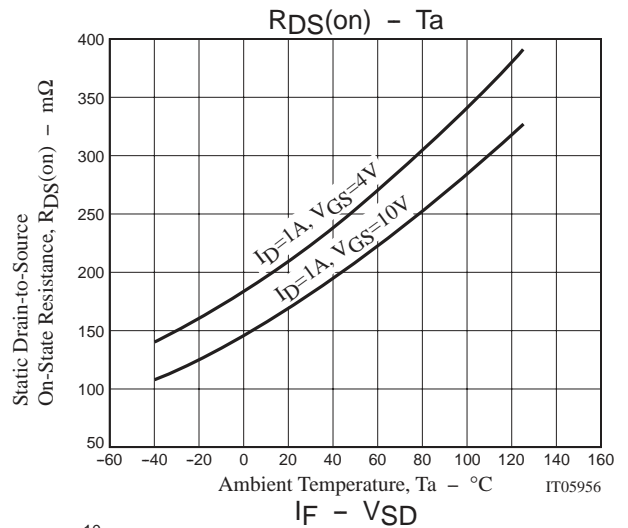
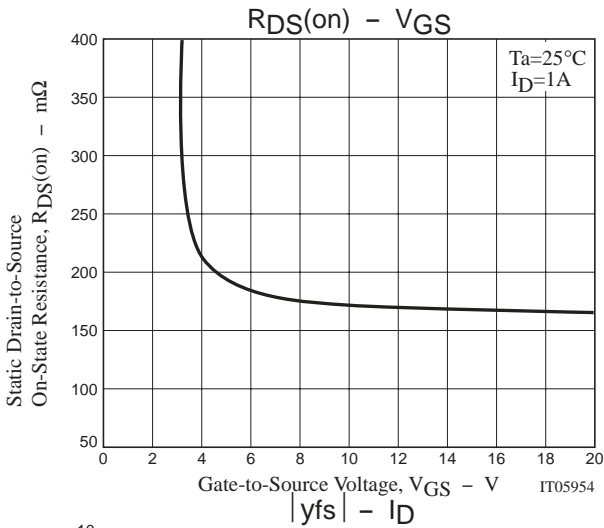
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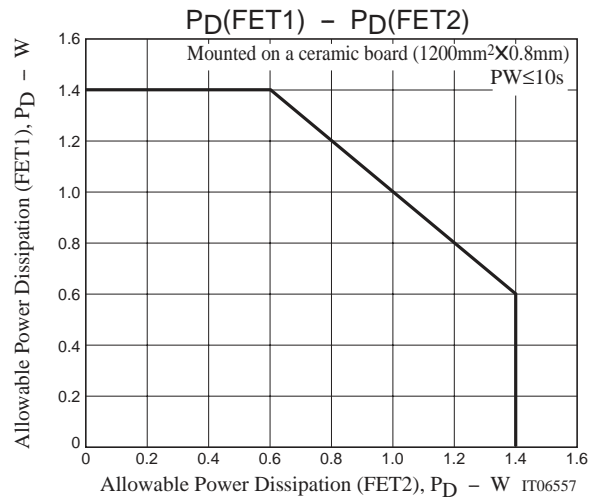
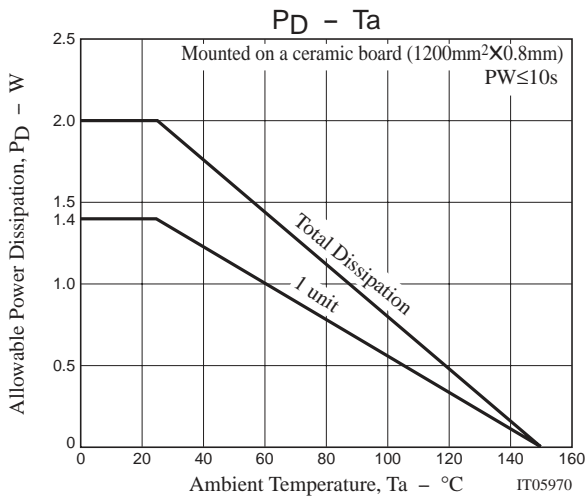
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1A, V_{GS}=10V$		175	220	m Ω
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4V$		220	310	m Ω
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		530		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		45		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		35		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		9		ns
Rise Time	t_r	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		58		ns
Fall Time	t_f	See specified Test Circuit.		25		ns
Total Gate Charge	Q_g	$V_{DS}=50V, V_{GS}=10V, I_D=3A$		13		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=50V, V_{GS}=10V, I_D=3A$		2.1		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=50V, V_{GS}=10V, I_D=3A$		2.8		nC
Diode Forward Voltage	V_{SD}	$I_S=2A, V_{GS}=0$		0.82	1.2	V

Switching Time Test Circuit







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