



General-Purpose Switching Device Applications

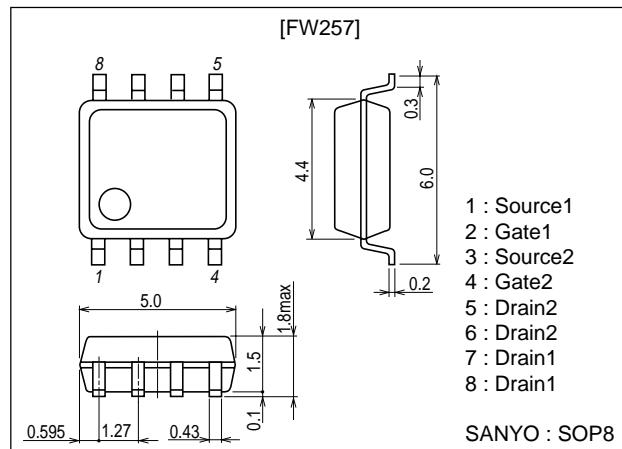
Features

- Motor drive.
- 4V drive.

Package Dimensions

unit : mm

2129



Specifications

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

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 ($PW \leq 10s$)	I_D	duty cycle $\leq 1\%$	2.5		A
Drain Current ($PW \leq 100\text{ms}$)	I_D	duty cycle $\leq 1\%$	5		A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	duty cycle $\leq 1\%$	8		A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1200mm 2 \times 0.8mm) 1unit ($PW \leq 10s$)	1.4		W
Total Dissipation	P_T	Mounted on a ceramic board (1200mm 2 \times 0.8mm) ($PW \leq 10s$)	2.0		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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100\text{V}$, $V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=1\text{A}$	1.8	3		S

Marking : W257

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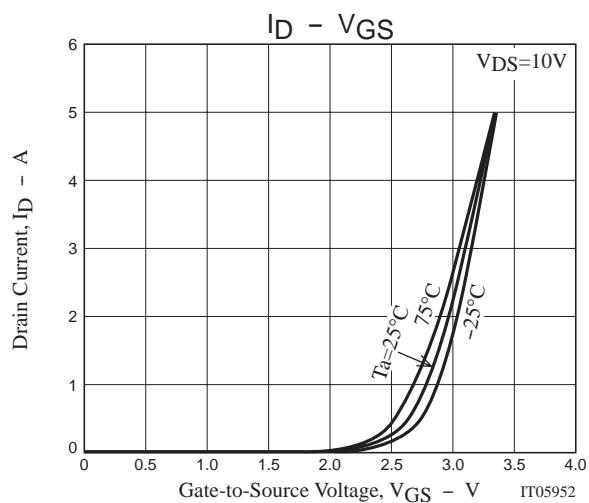
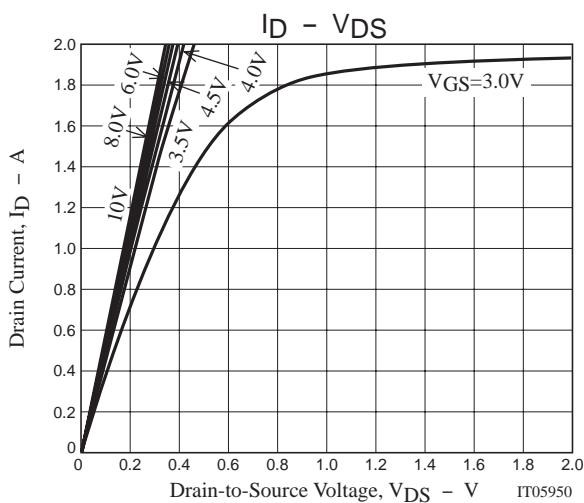
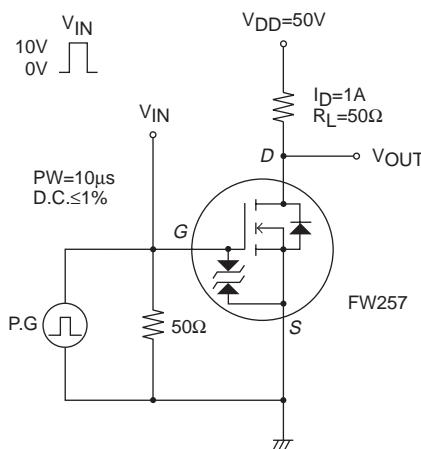
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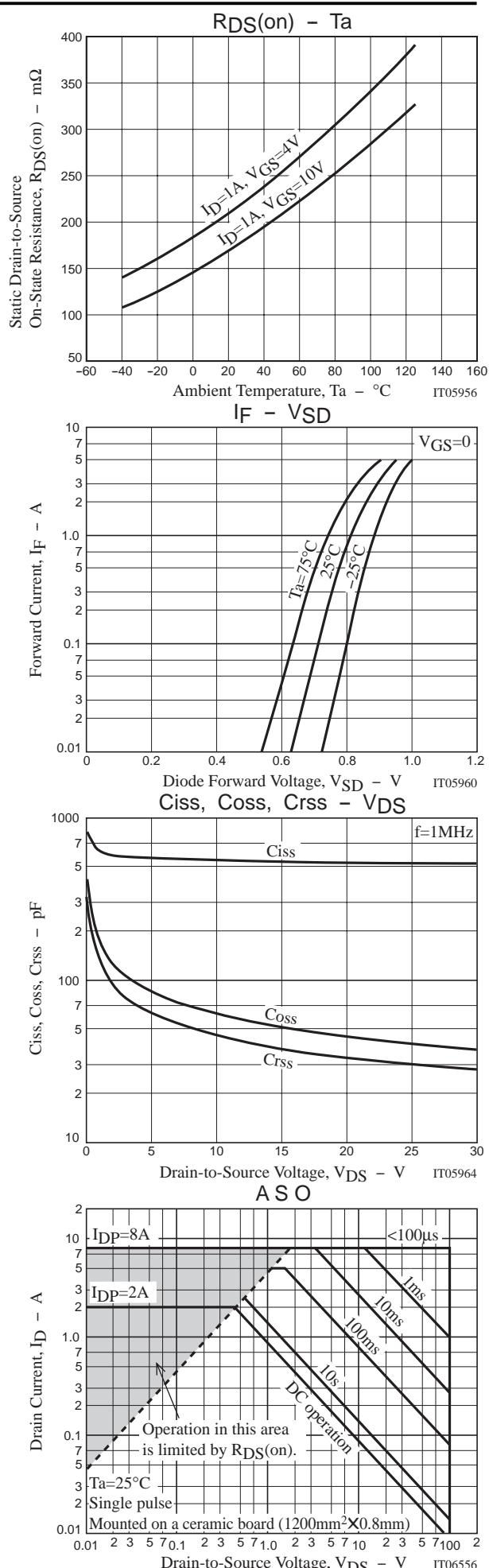
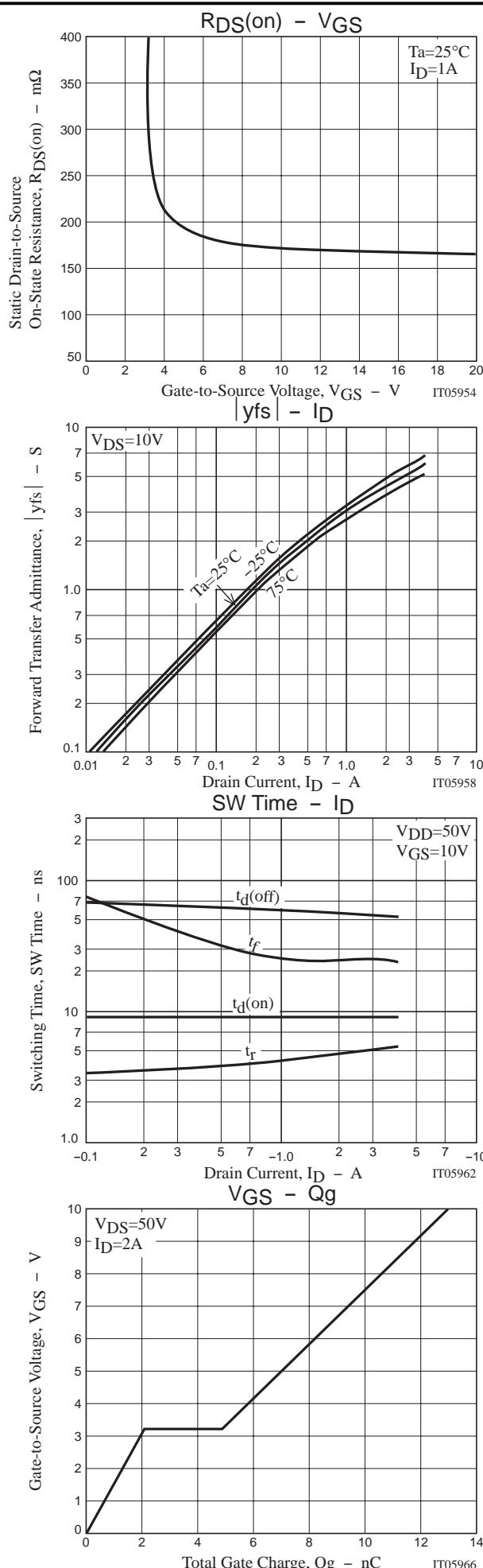
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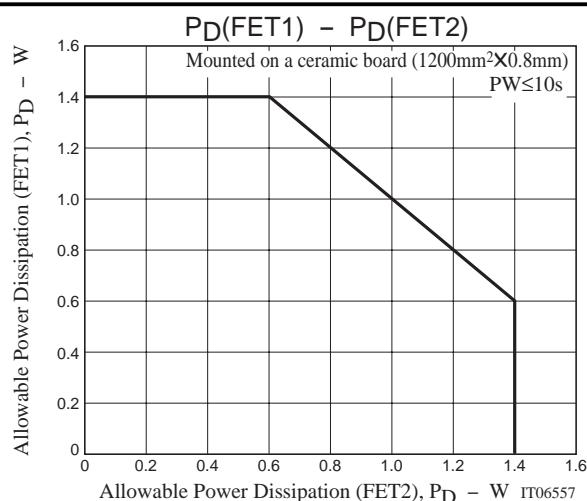
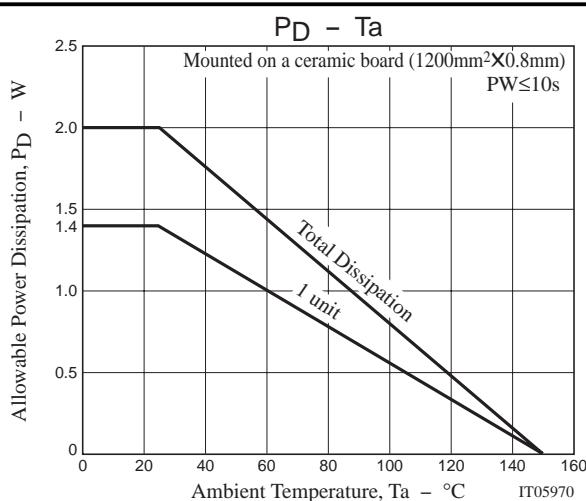
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1A, V_{GS}=10V$		175	220	$m\Omega$
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4V$		220	310	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$	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	0.82	V

Switching Time Test Circuit







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