Ordering number : ENA1509

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

SFT1423 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		500	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		2	A
Drain Current (PW≤10μs)	I_{DP}	PW≤10μs, duty cycle≤1%	10	A
Allowable Power Dissipation	P_D		1.0	W
		Tc=25°C	20	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=10mA, V_{GS}=0V	500			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=400V, V_{GS}=0V			100	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=10V, I_D=1mA	1.2		2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=1A	1.1	1.9		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=1A, V_{GS}=10V		3.8	4.9	Ω
	$R_{DS}(on)2$	I_D=0.5A, V_{GS}=4V		3.9	5	Ω

Marking : T1423

Continued on next page.

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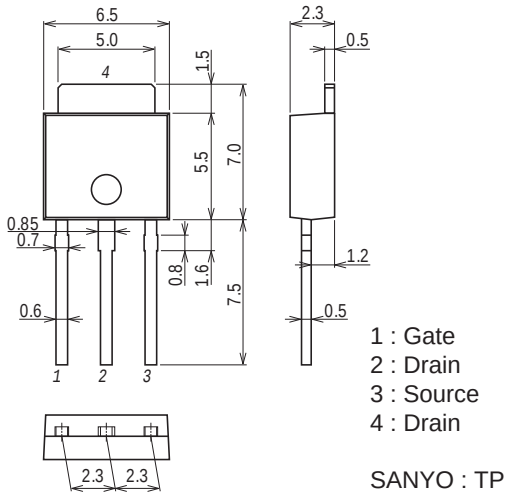
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=30V, f=1MHz		175		pF
Output Capacitance	Coss	V_{DS}=30V, f=1MHz		32		pF
Reverse Transfer Capacitance	Crss	V_{DS}=30V, f=1MHz		6		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		7.4		ns
Rise Time	t_r	See specified Test Circuit.		8.8		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		42		ns
Fall Time	t_f	See specified Test Circuit.		27		ns
Total Gate Charge	Qg	V_{DS}=200V, V_{GS}=10V, I_D=2A		8.7		nC
Gate-to-Source Charge	Qgs	V_{DS}=200V, V_{GS}=10V, I_D=2A		1.1		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=200V, V_{GS}=10V, I_D=2A		2.9		nC
Diode Forward Voltage	V_{SD}	I_S=2A, V_{GS}=0V		0.9	1.2	V

Package Dimensions

unit : mm (typ)

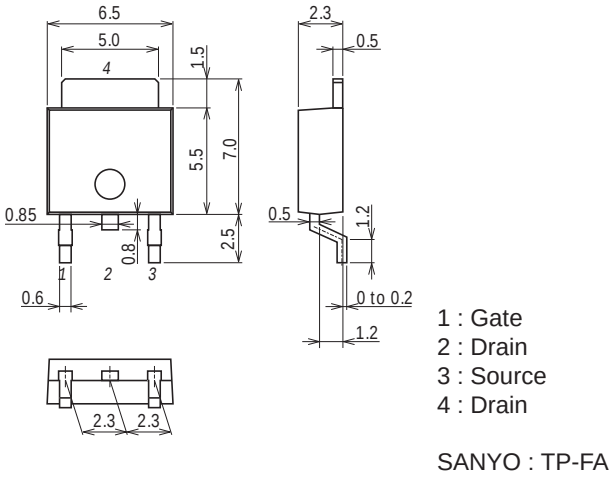
7518-004



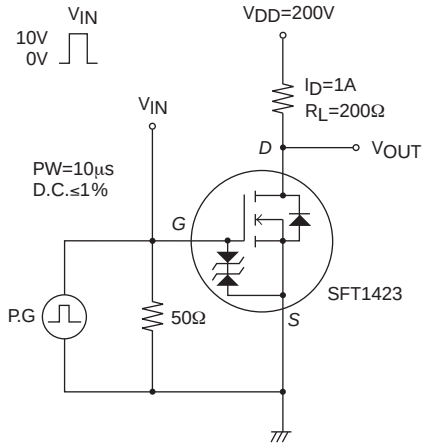
Package Dimensions

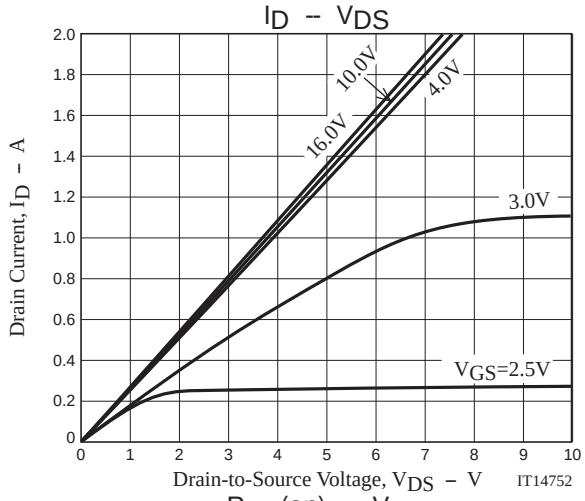
unit : mm (typ)

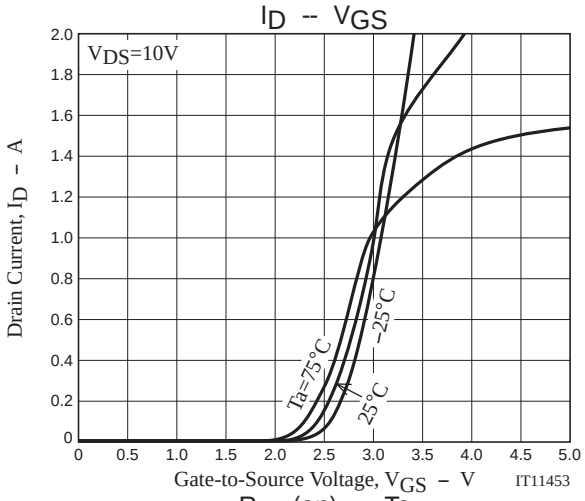
7003-004

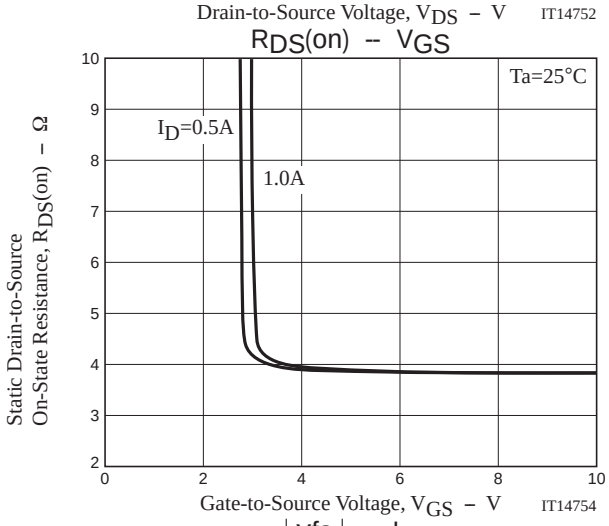


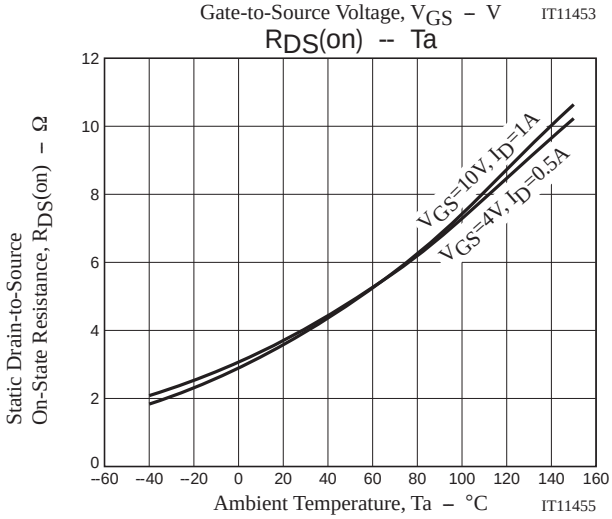
Switching Time Test Circuit

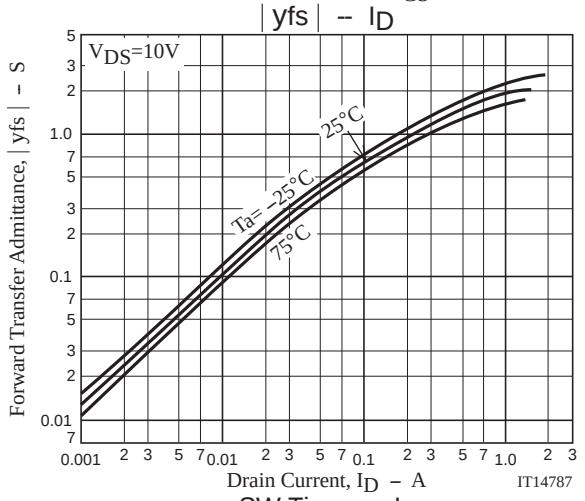


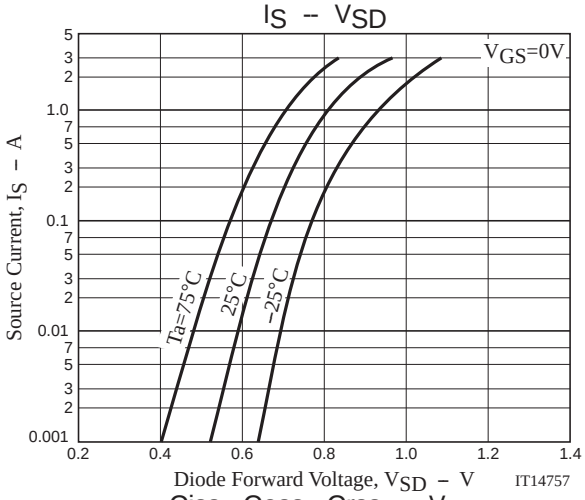

ID -- VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
10.0V
16.0V
4.0V
3.0V
VGS=2.5V
IT14752

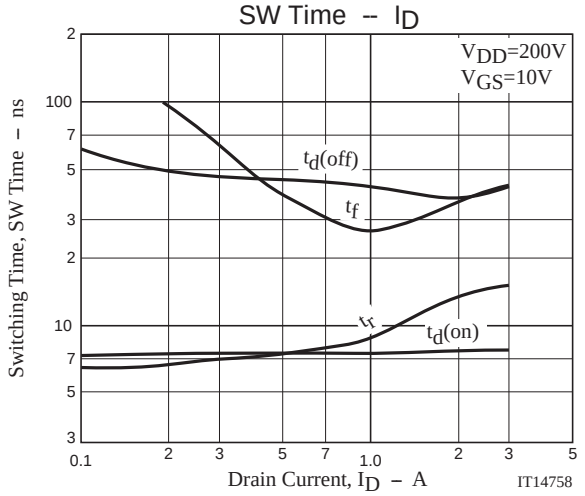

ID -- VGS
VDS=10V
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
Ta=75°C
25°C
–25°C
IT11453

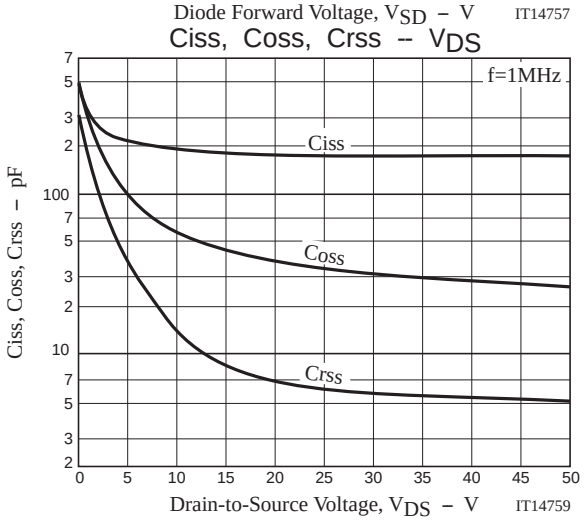

RDS(on) -- VGS
Ta=25°C
ID=0.5A
1.0A
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT14754

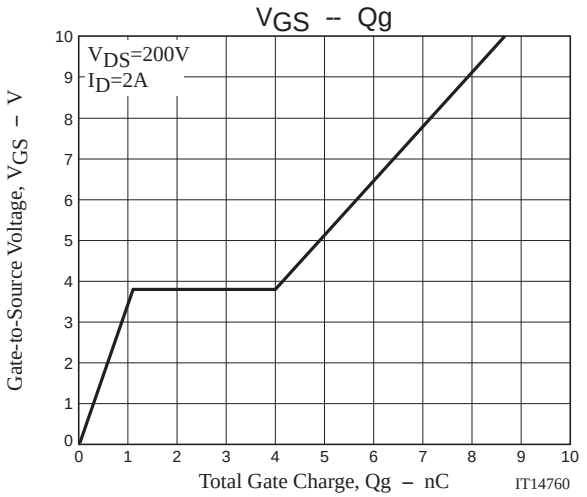

RDS(on) -- Ta
VGS=10V, ID=1A
VGS=4V, ID=0.5A
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Ambient Temperature, Ta – °C
IT11455

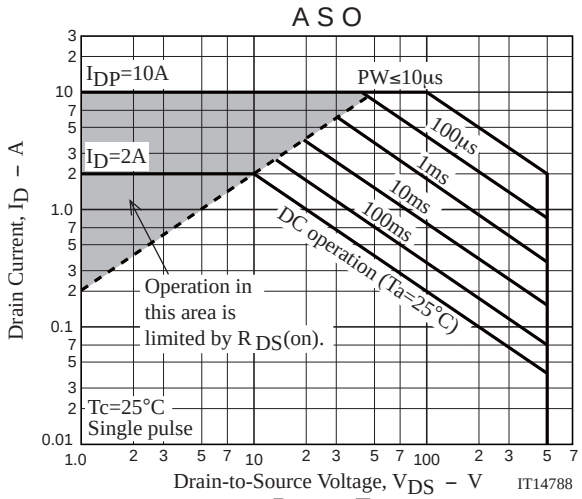

| yfs | -- ID
VDS=10V
25°C
Ta= –25°C
75°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT14787

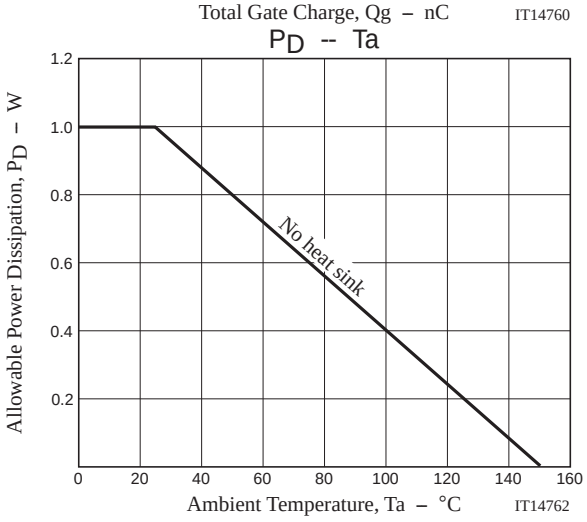

IS -- VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT14757

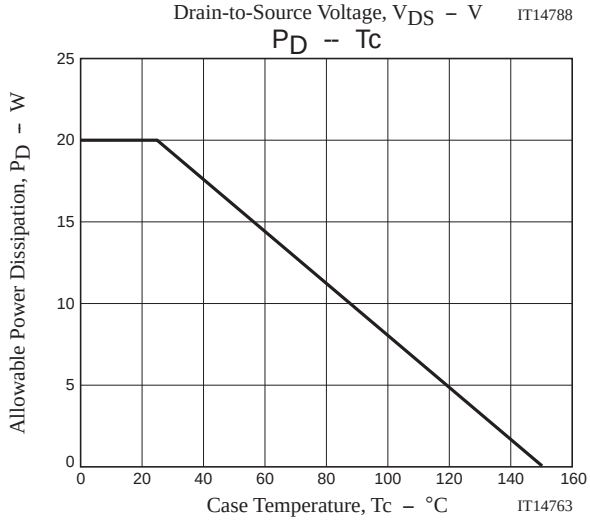

SW Time -- ID
VDD=200V
VGS=10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT14758


Ciss, Coss, Crss -- VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT14759









Note on usage : Since the SFT1423 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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