



SFT1407 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Motor drive application.
- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		45	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		14	A
Drain Current (PW≤10μs)	I _{DP}	PW≤10μs, duty cycle≤1%	56	A
Allowable Power Dissipation	P _D		1.0	W
		T _c =25°C	20	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} =0V	45			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =45V, V _{GS} =0V			1	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	y _{fs}	V _{DS} =10V, I _D =7A	5.8	9.7		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =7A, V _{GS} =10V		21	28	mΩ
	R _{DS(on)2}	I _D =7A, V _{GS} =4V		29	41	mΩ

Marking : T1407

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SFT1407

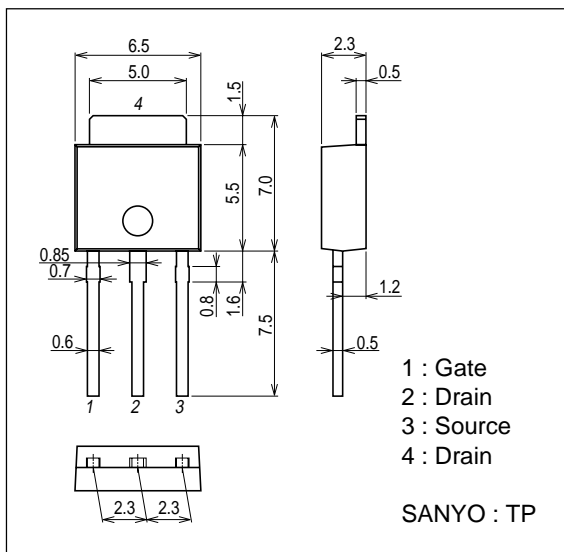
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		2225		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		260		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz		190		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		27		ns
Rise Time	t _r	See specified Test Circuit.		50		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		150		ns
Fall Time	t _f	See specified Test Circuit.		80		ns
Total Gate Charge	Qg	V _{DS} =24V, V _{GS} =10V, I _D =14A		40		nC
Gate-to-Source Charge	Qgs	V _{DS} =24V, V _{GS} =10V, I _D =14A		6		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =24V, V _{GS} =10V, I _D =14A		8		nC
Diode Forward Voltage	V _{SD}	I _S =14A, V _{GS} =0V	0.92		1.2	V

Package Dimensions

unit : mm (typ)

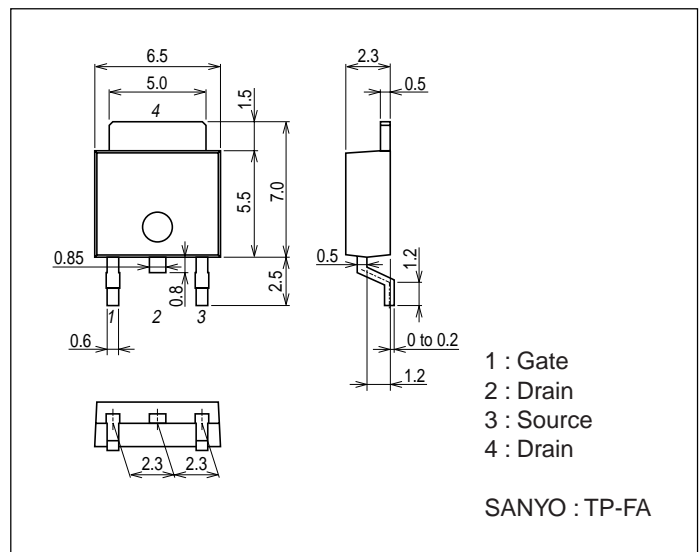
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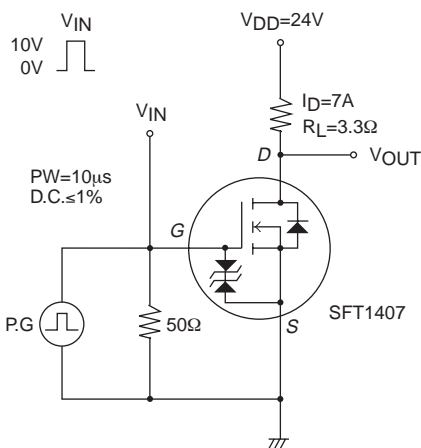
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unit : mm (typ)

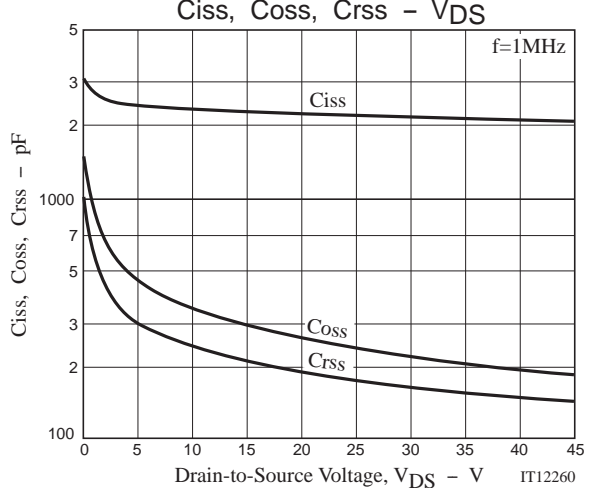
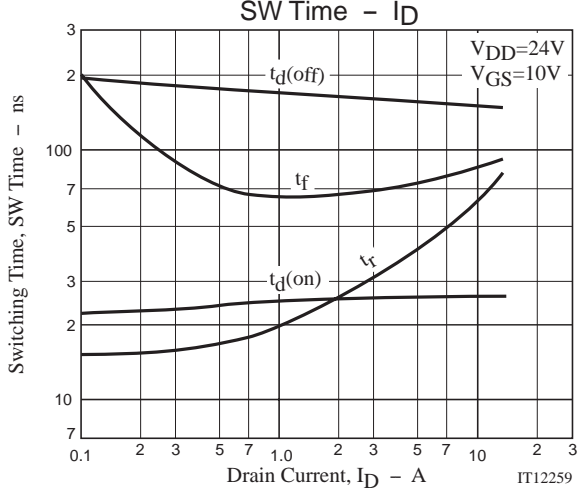
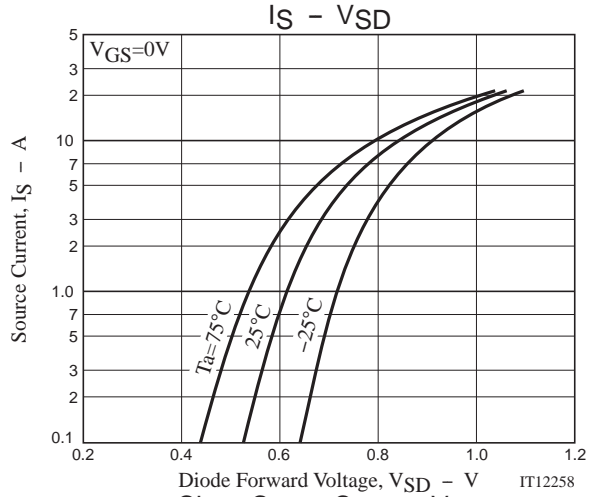
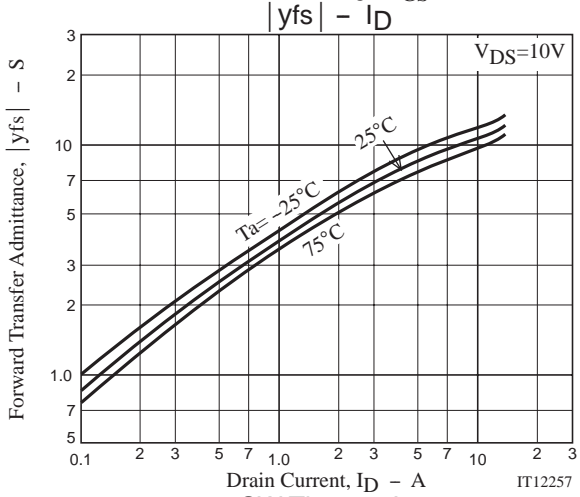
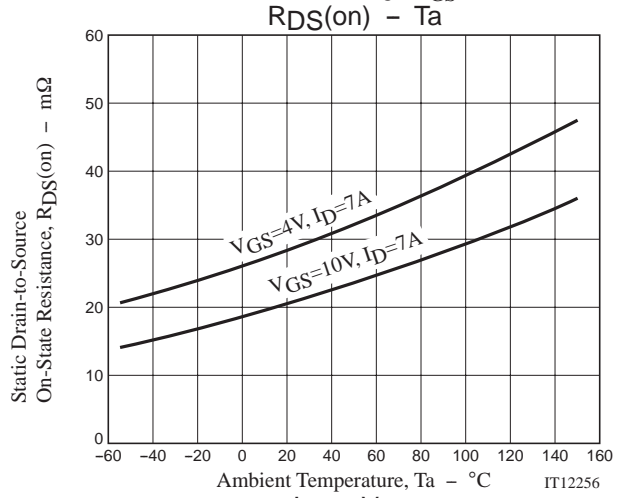
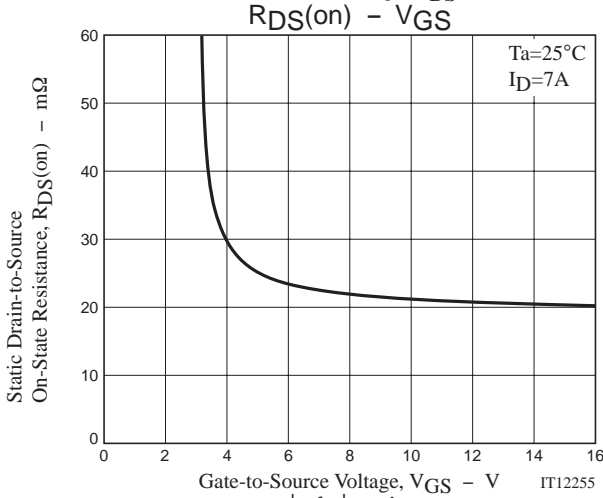
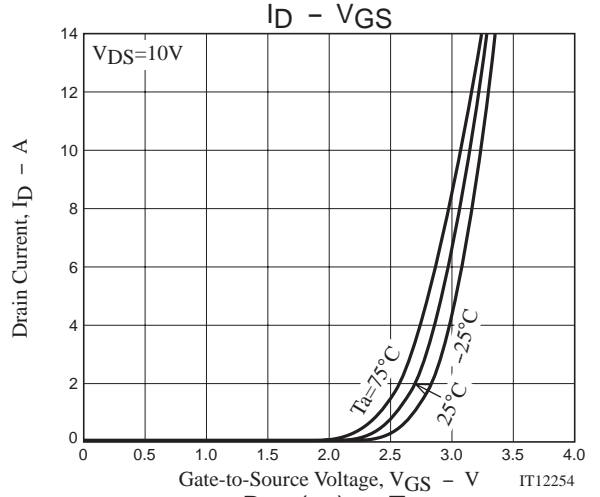
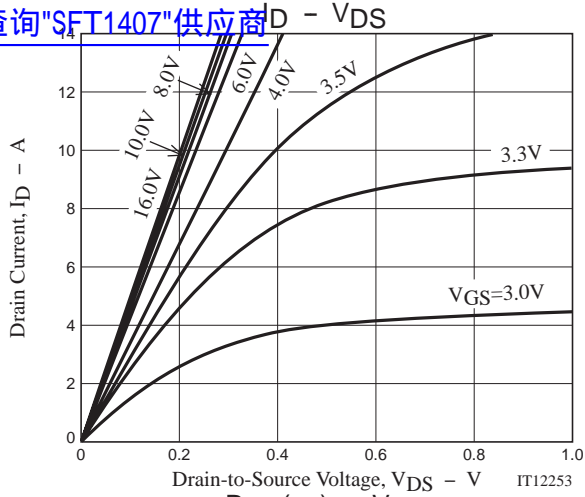
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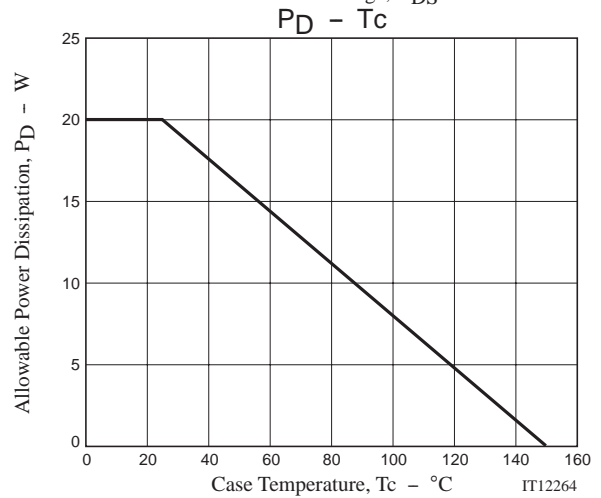
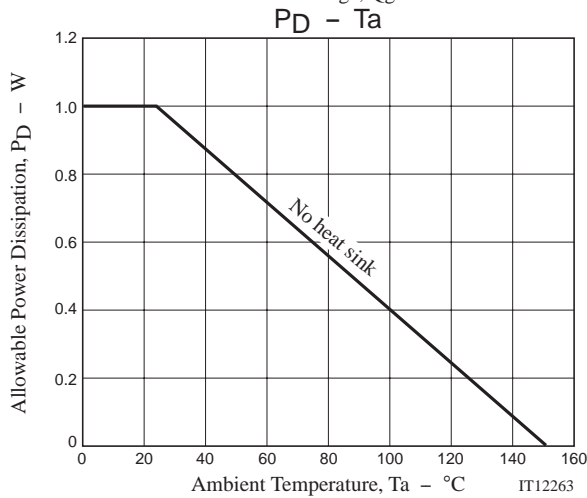
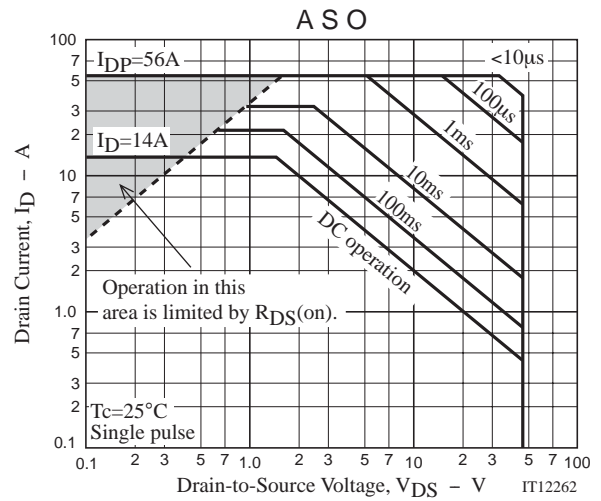
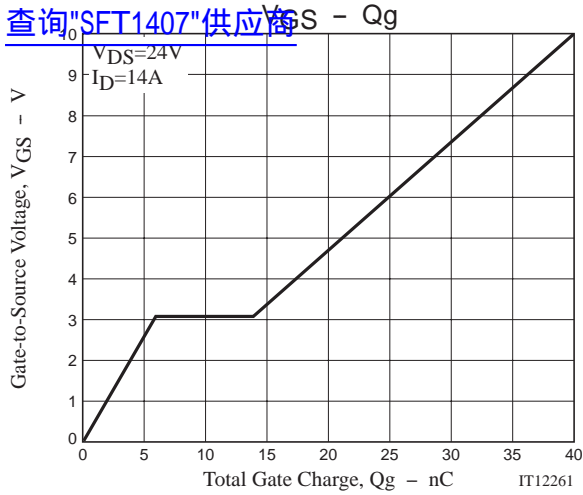


Switching Time Test Circuit



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Note on usage : Since the SFT1407 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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