



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

SFT1445 — General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS(on)} = 85\text{m}\Omega$ (typ.)
- 4V drive
- Input Capacitance $C_{iss} = 1030\text{pF}$ (typ.)
- Halogen free compliance

Specifications

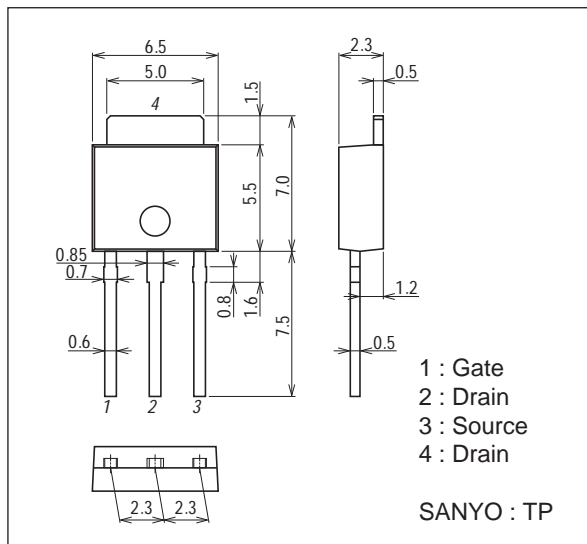
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		100	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		17	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	68	A
Allowable Power Dissipation	P_D		1.0	W
		$T_c = 25^\circ\text{C}$	35	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions

unit : mm (typ)

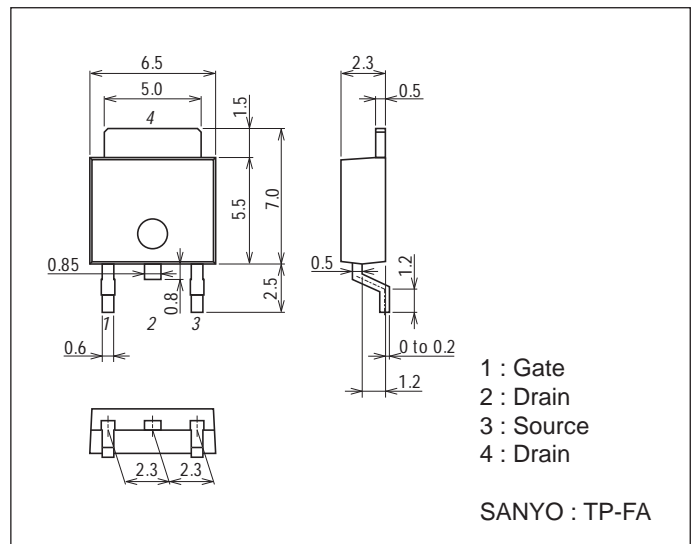
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Package Dimensions

unit : mm (typ)

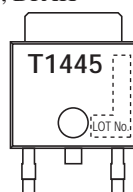
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Product & Package Information

- Package : TP
- JEITA, JEDEC : SC-64, TO-251, SOT-553, DPAK
- Minimum Packing Quantity : 500 pcs./bag

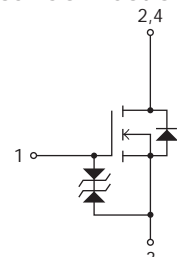
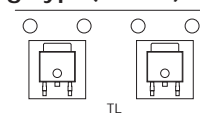
Marking(TP, TP-FA)



Product & Package Information Electrical Connection

- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252, SOT-428, DPAK
- Minimum Packing Quantity : 700 pcs./reel

Packing Type(TP-FA) : TL



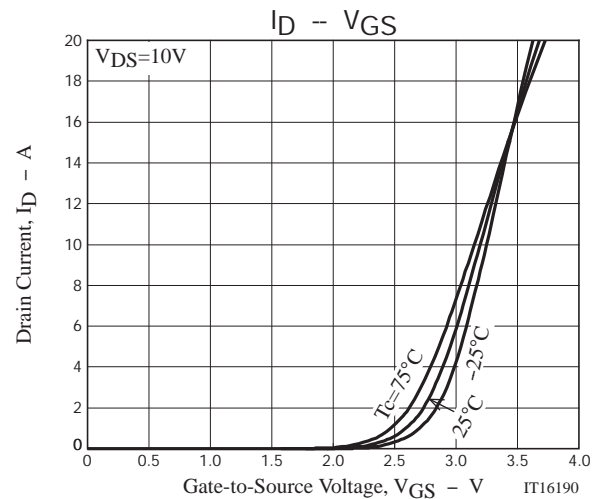
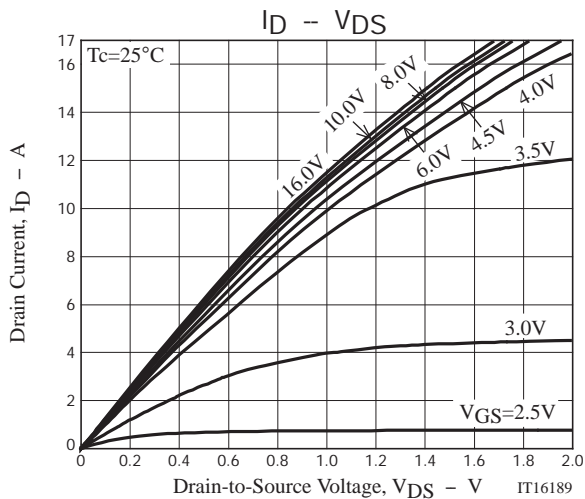
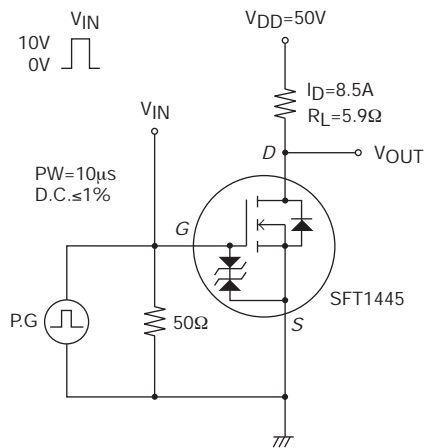
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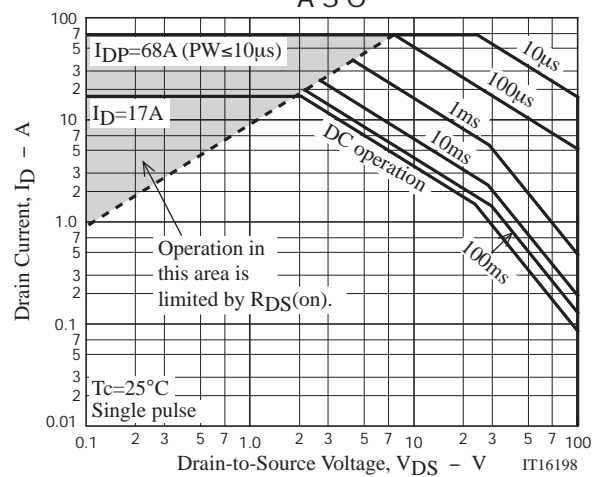
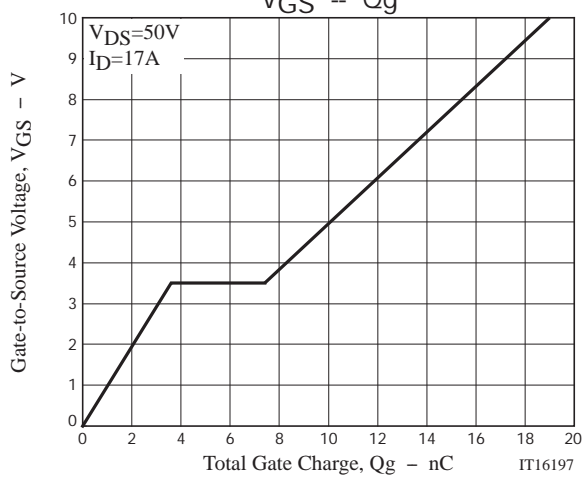
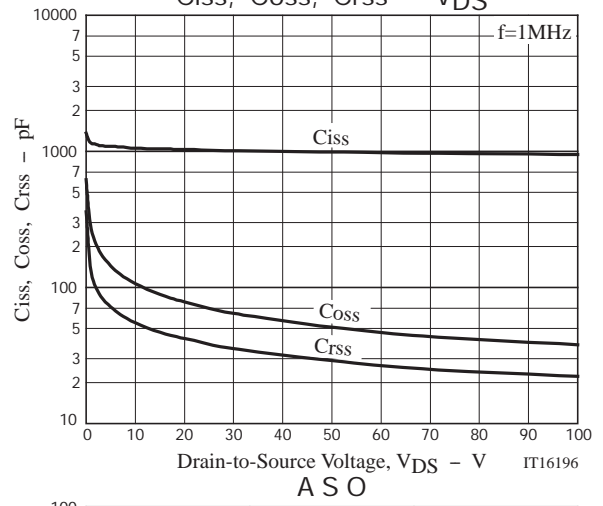
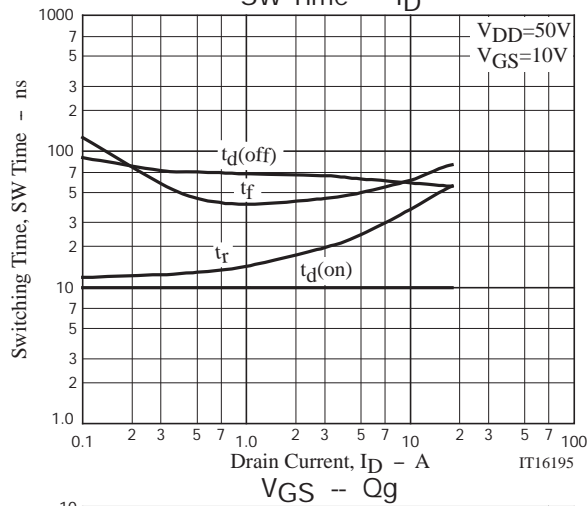
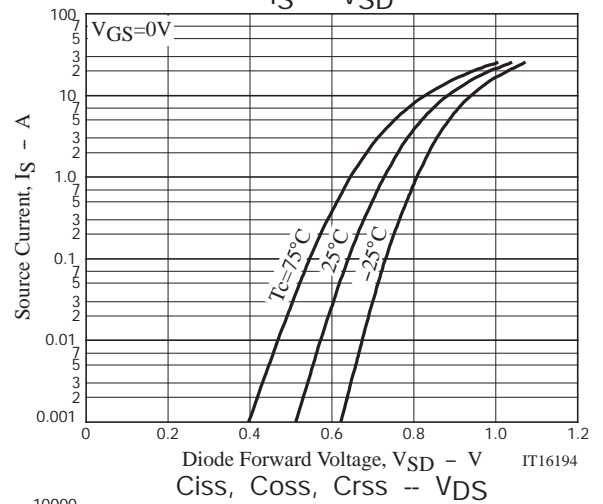
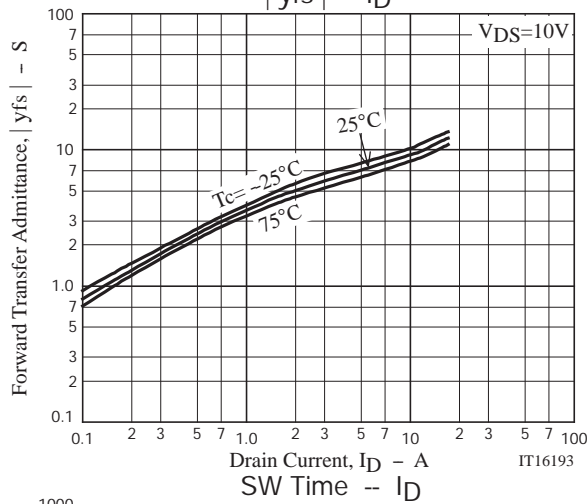
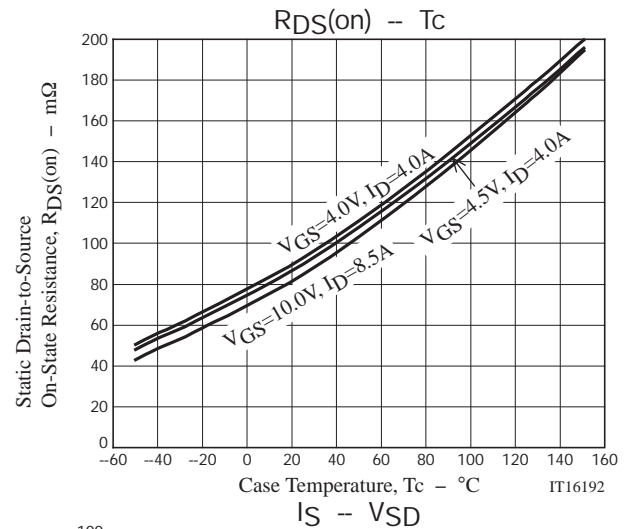
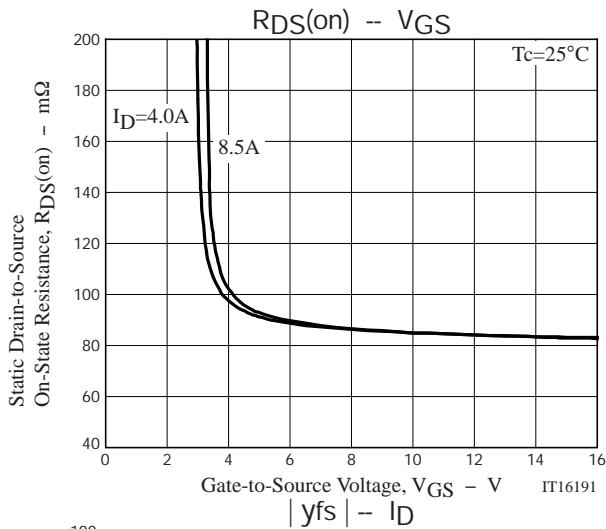
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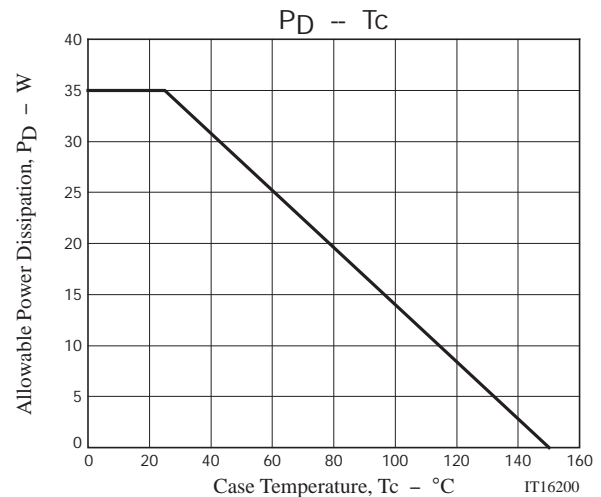
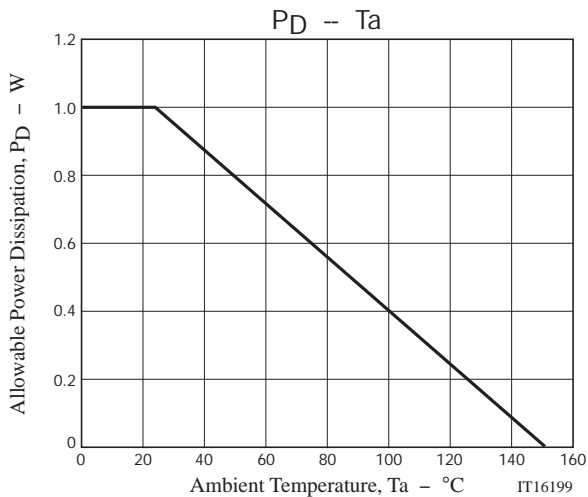
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=8.5\text{A}$		8.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=8.5\text{A}$, $V_{GS}=10\text{V}$		85	111	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=4\text{A}$, $V_{GS}=4.5\text{V}$		90	126	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=4\text{A}$, $V_{GS}=4\text{V}$		93	130	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		1030		pF
Output Capacitance	C_{oss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		78		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		42		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	t_r	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		60		ns
Fall Time	t_f	See specified Test Circuit.		60		ns
Total Gate Charge	Q_g	$V_{DS}=50\text{V}$, $V_{GS}=10\text{V}$, $I_D=17\text{A}$		19		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=50\text{V}$, $V_{GS}=10\text{V}$, $I_D=17\text{A}$		3.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=50\text{V}$, $V_{GS}=10\text{V}$, $I_D=17\text{A}$		3.8		nC
Diode Forward Voltage	V_{SD}	$I_S=17\text{A}$, $V_{GS}=0\text{V}$		0.96	1.2	V

Switching Time Test Circuit







Note on usage : Since the SFT1445 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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