Ordering number : ENA1897

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

SFT1445 — General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS}(on)1=85m\Omega$(typ.)
- 4V drive
- Input Capacitance Ciss=1030pF(typ.)
- Halogen free compliance

Specifications

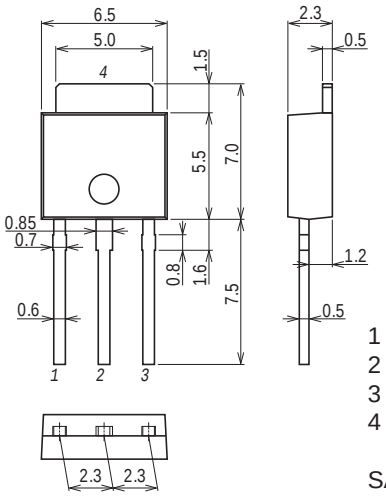
Absolute Maximum Ratings at Ta=25°C

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		17	A
Drain Current (PW≤10μs)	I_{DP}	PW≤10μs, duty cycle≤1%	68	A
Allowable Power Dissipation	P_D		1.0	W
		Tc=25°C	35	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

7518-004



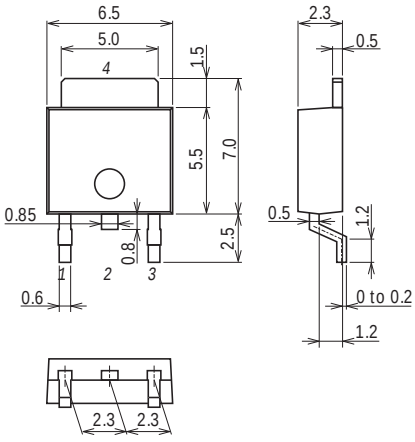
1 : Gate
2 : Drain
3 : Source
4 : Drain

SANYO : TP

Package Dimensions

unit : mm (typ)

7003-004



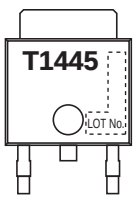
1 : Gate
2 : Drain
3 : Source
4 : Drain

SANYO : TP-FA

Product & Package Information

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

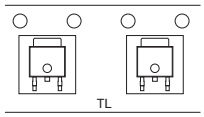
Marking(TP, TP-FA)



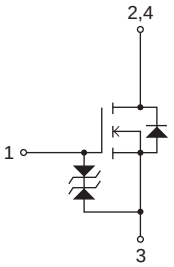
Product & Package Information

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

Packing Type(TP-FA) : TL



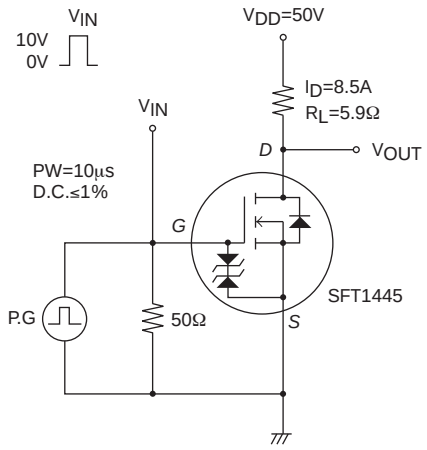
Electrical Connection

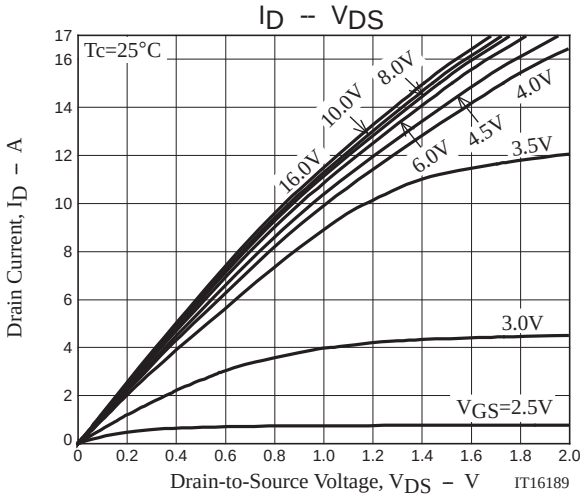


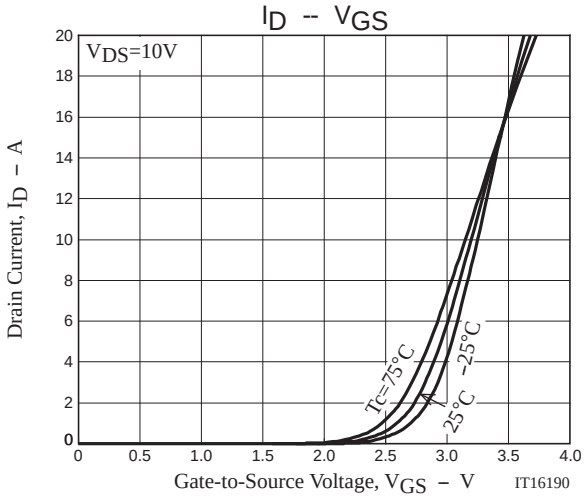
Electrical Characteristics at Ta=25°C

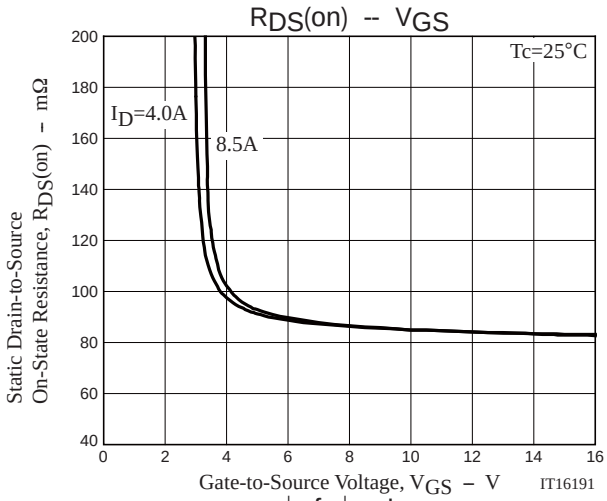
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	1.2		2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=8.5A		8.9		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=8.5A, V_{GS}=10V		85	111	mΩ
	R_{DS}(on)2	I_D=4A, V_{GS}=4.5V		90	126	mΩ
	R_{DS}(on)3	I_D=4A, V_{GS}=4V		93	130	mΩ
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		1030		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		78		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		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	Qg	V_{DS}=50V, V_{GS}=10V, I_D=17A		19		nC
Gate-to-Source Charge	Qgs	V_{DS}=50V, V_{GS}=10V, I_D=17A		3.6		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=50V, V_{GS}=10V, I_D=17A		3.8		nC
Diode Forward Voltage	V_{SD}	I_S=17A, V_{GS}=0V		0.96	1.2	V

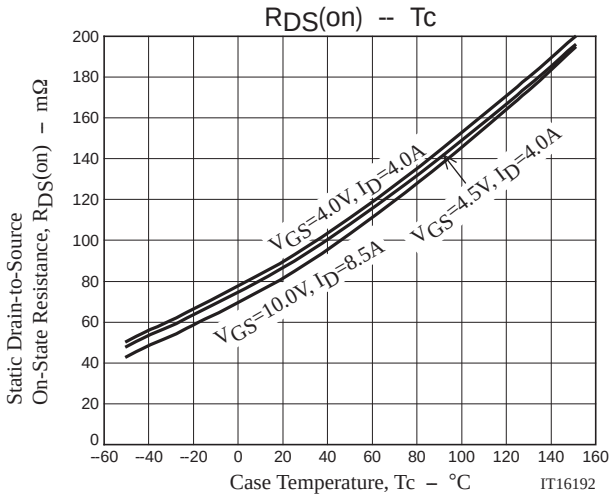
Switching Time Test Circuit

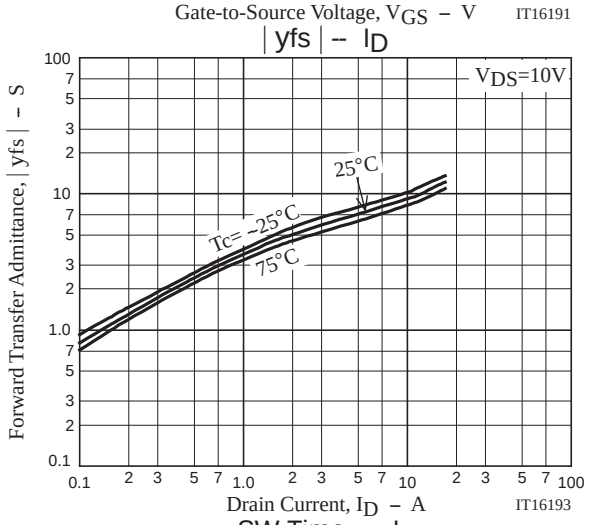


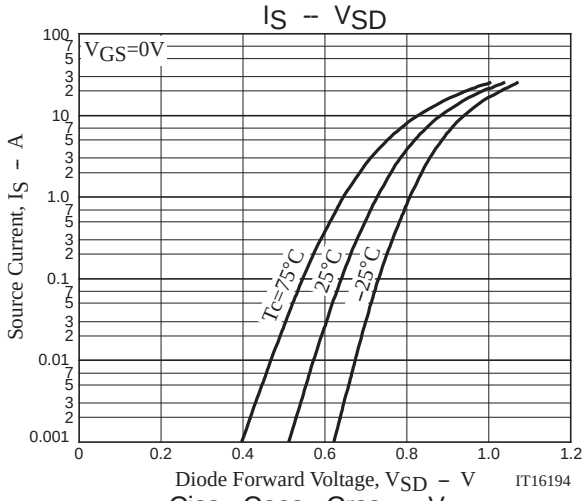


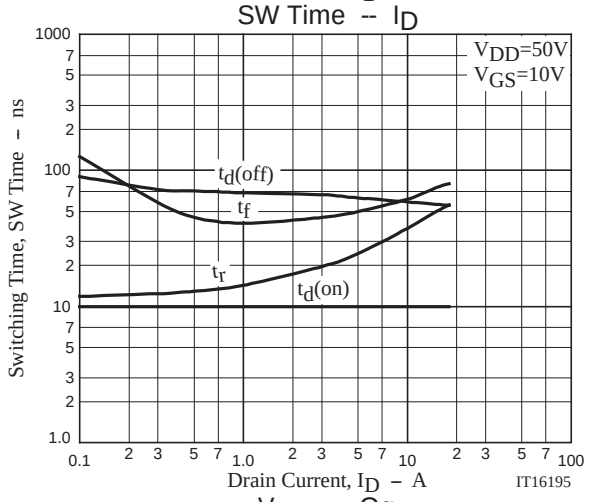


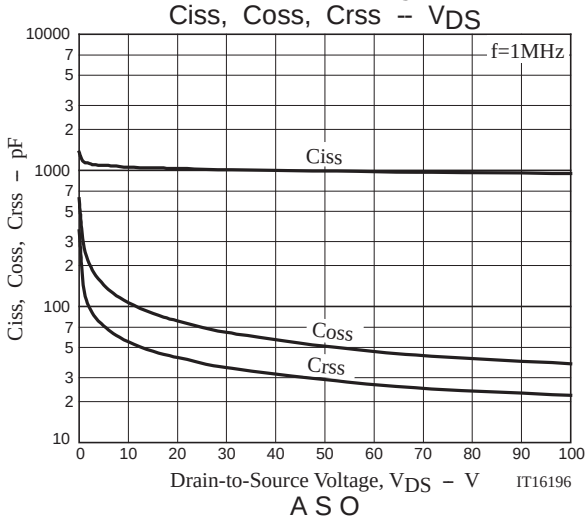

RDS(on) -- VGS
Tc=25°C
ID=4.0A
8.5A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT16191

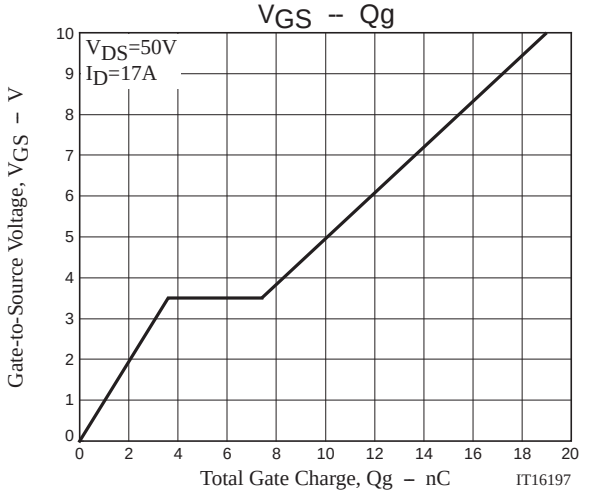

RDS(on) -- Tc
VGS=4.0V, ID=4.0A
VGS=4.5V, ID=4.0A
VGS=10.0V, ID=8.5A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Case Temperature, Tc – °C
IT16192

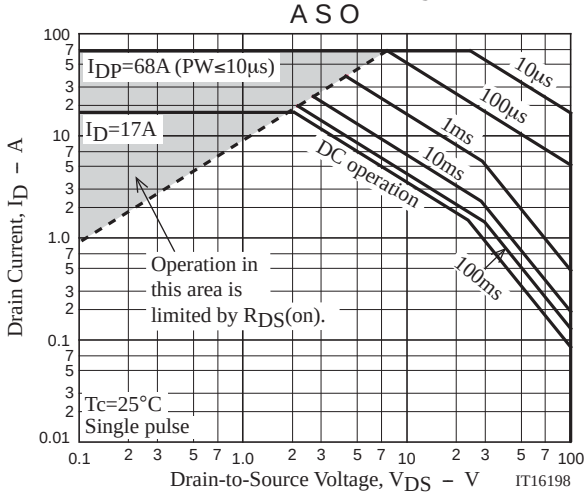

| yfs | -- ID
VDS=10V
25°C
Tc=–25°C
75°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT16193

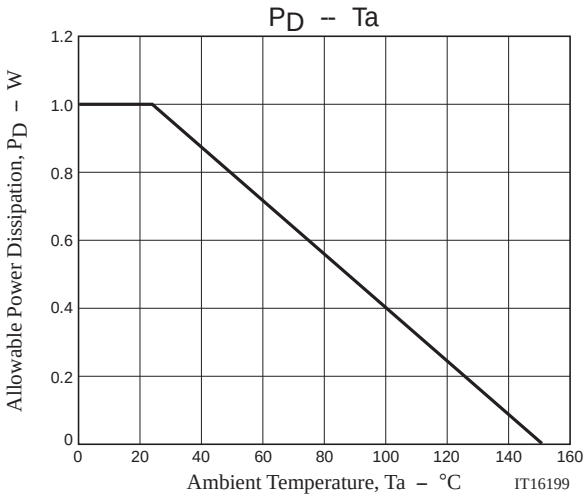

IS -- VSD
VGS=0V
Tc=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT16194

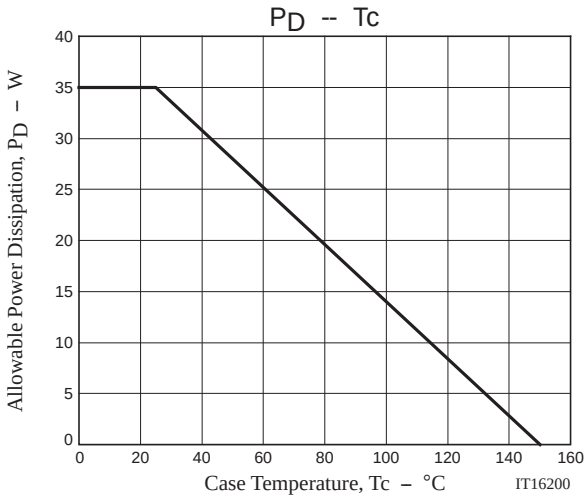

SW Time -- ID
VDD=50V
VGS=10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT16195


Ciss, Coss, Crss -- VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT16196


VGS -- Qg
VDS=50V
ID=17A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT16197


ASO
IDP=68A (PW≤10μs)
ID=17A
10μs
100μs
1ms
10ms
DC operation
100ms
Operation in this area is limited by RDS(on).
Tc=25°C
Single pulse
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT16198





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

This catalog provides information as of December, 2010. Specifications and information herein are subject to change without notice.