



2SK4197FS

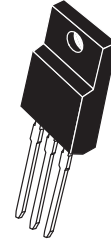
N-Channel Power MOSFET 600V, 3.5A, 3.25Ω, TO-220F-3FS

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Features

- ON-resistance $R_{DS(on)}=2.5\Omega$ (typ.)
- Input capacitance $C_{iss}=260\text{pF}$ (typ.)
- 10V drive



TO-220F-3FS

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		600	V
Gate to Source Voltage	V_{GSS}		± 30	V
Drain Current (DC)	I_D		3.5	A
Drain Current (DC) Limited by Package	I_{DL}		3.3	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	13	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c=25^\circ\text{C}$	28	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$
Avalanche Energy (Single Pulse) *1	E_{AS}		29	mJ
Avalanche Current *2	I_{AV}		3.3	A

Note : *1 $V_{DD}=50\text{V}$, $L=5\text{mH}$, $I_{AV}=3.3\text{A}$ (Fig.1)*2 $L \leq 5\text{mH}$, Single pulse

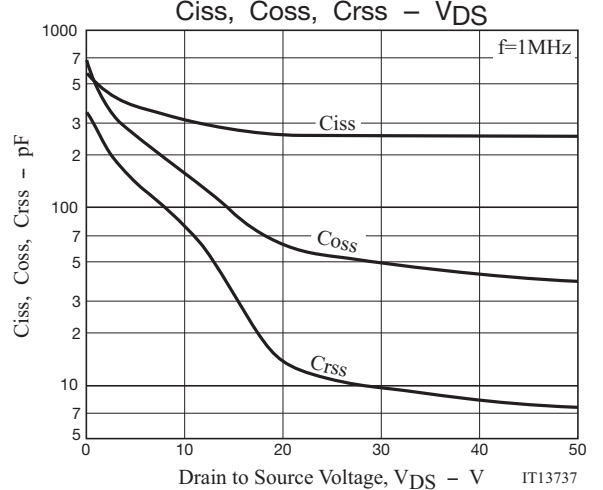
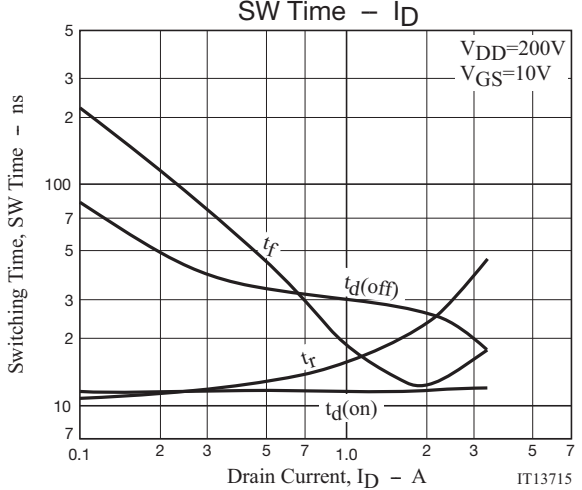
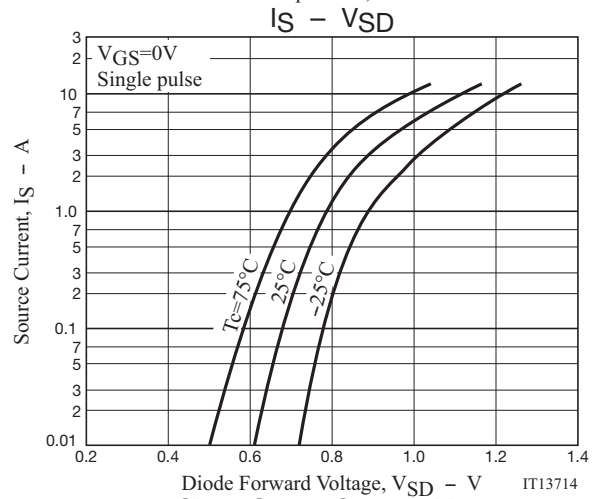
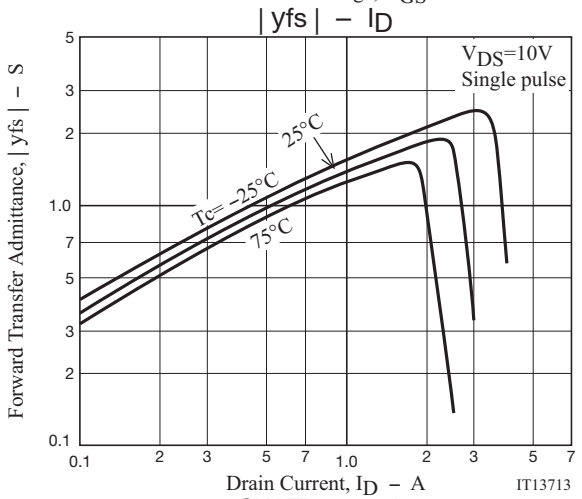
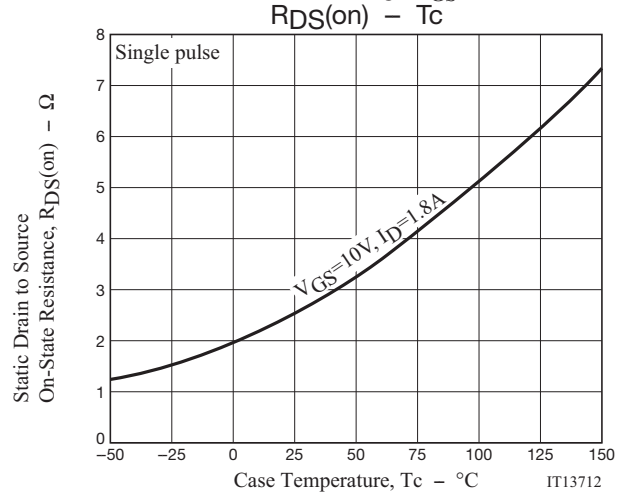
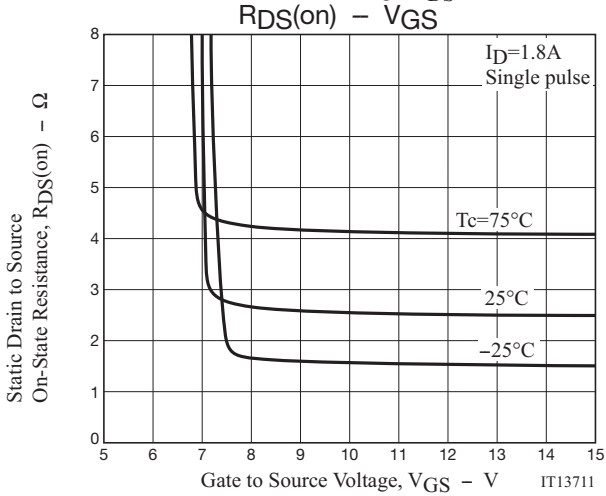
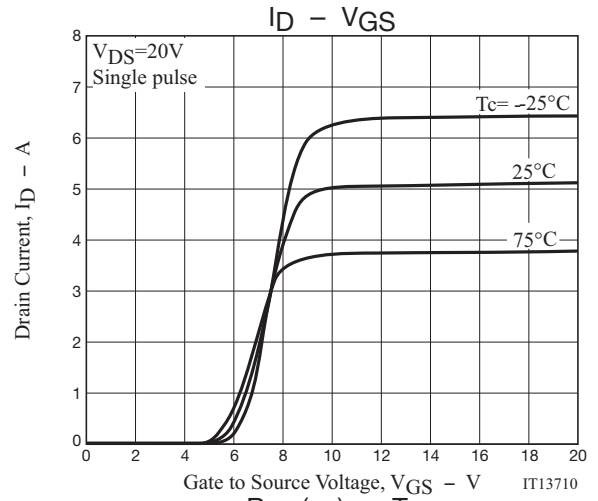
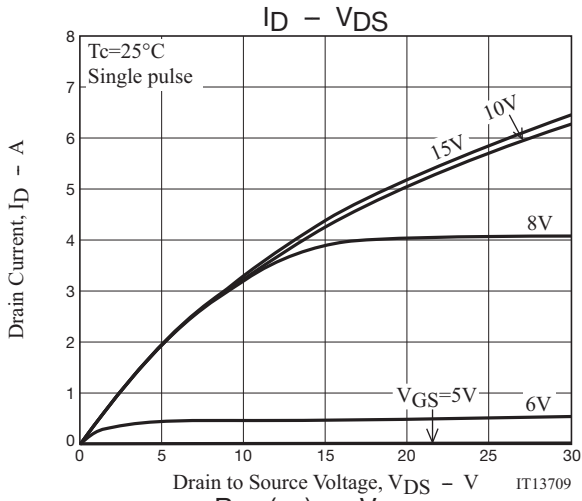
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

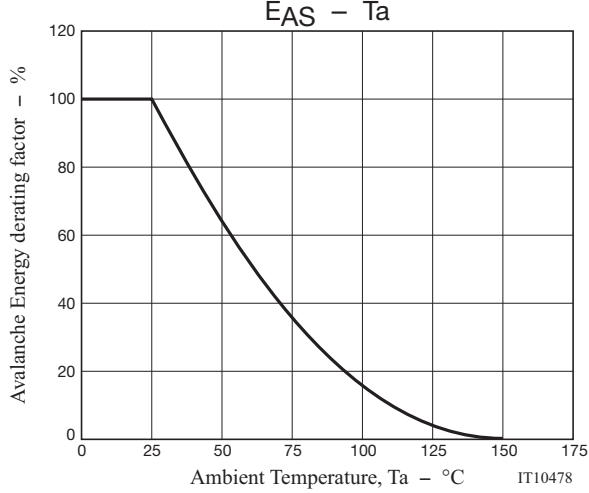
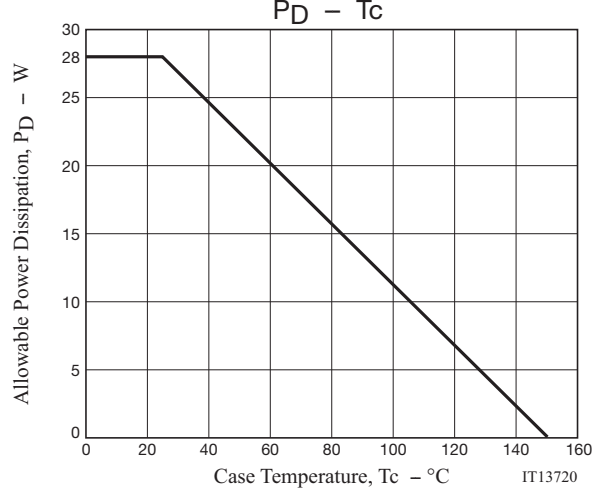
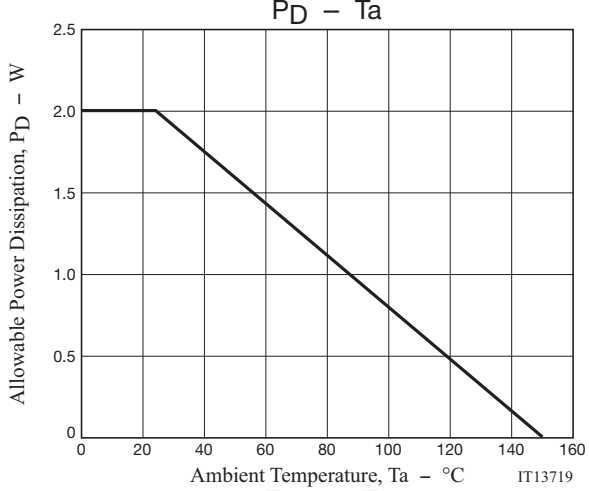
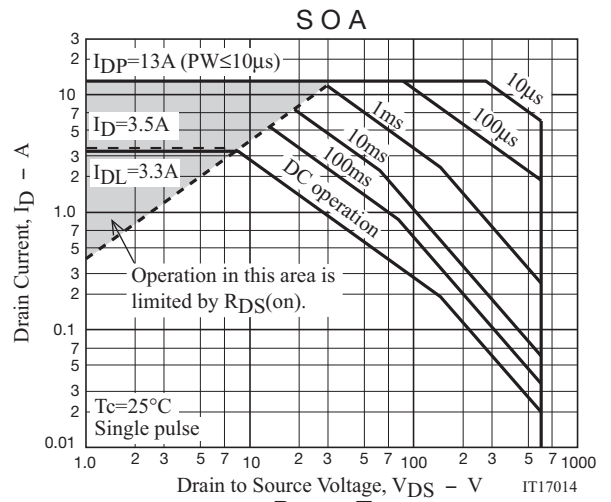
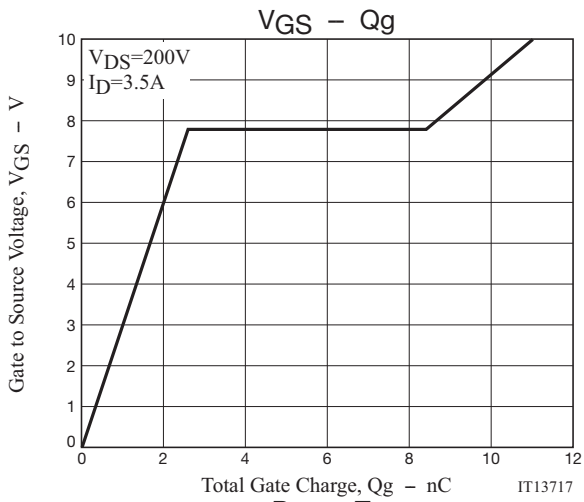
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}$, $V_{GS}=0\text{V}$	600			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=480\text{V}$, $V_{GS}=0\text{V}$			100	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30\text{V}$, $V_{DS}=0\text{V}$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	3		5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=1.8\text{A}$	0.8	1.6		S
Static Drain to Source On-State Resistance	$R_{DS(on)}$	$I_D=1.8\text{A}$, $V_{GS}=10\text{V}$		2.5	3.25	Ω
Input Capacitance	C_{iss}	$V_{DS}=30\text{V}$, $f=1\text{MHz}$		260		pF
Output Capacitance	C_{oss}				50	pF
Reverse Transfer Capacitance	C_{rss}				9.7	pF
Turn-ON Delay Time	$t_d(on)$	Fig.2		12		ns
Rise Time	t_r			20		ns
Turn-OFF Delay Time	$t_d(off)$			28		ns
Fall Time	t_f			12		ns
Total Gate Charge	Q_g	$V_{DS}=200\text{V}$, $V_{GS}=10\text{V}$, $I_D=3.5\text{A}$		11		nC
Gate to Source Charge	Q_{gs}			2.6		nC
Gate to Drain "Miller" Charge	Q_{gd}			5.8		nC
Diode Forward Voltage	V_{SD}	$I_S=3.5\text{A}$, $V_{GS}=0\text{V}$		0.9	1.2	V

ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.





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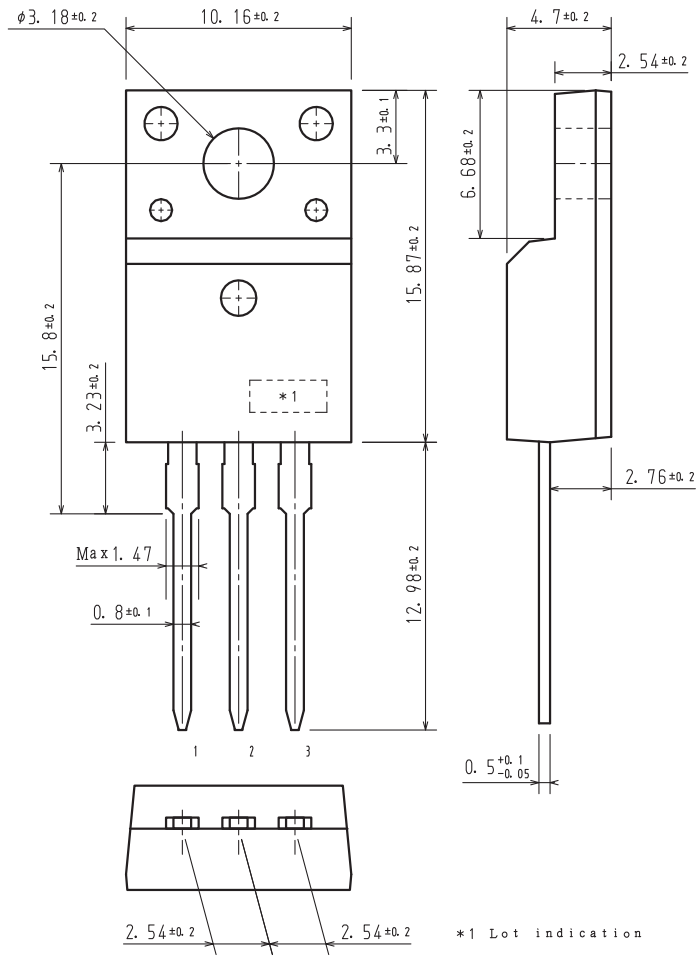
Package Dimensions

2SK4197FS

TO-220F-3FS
CASE 221AM
ISSUE O

Unit : mm

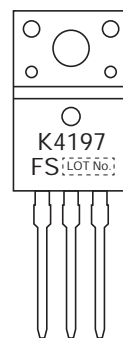
- 1: Gate
- 2: Drain
- 3: Source



Ordering & Package Information

Device	Package	Shipping	memo
2SK4197FS	TO-220F-3FS SC-67	50 pcs./tube	Pb-Free

Marking



Electrical Connection

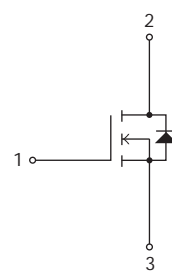


Fig.1 Unclamped Inductive Switching Test Circuit

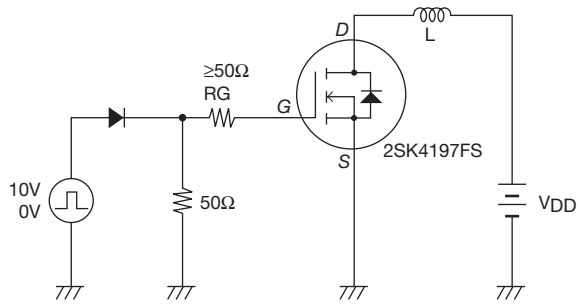
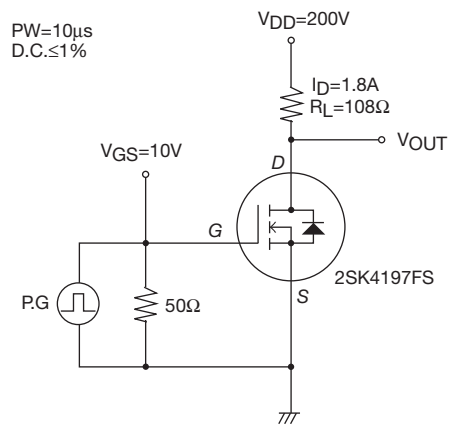


Fig.2 Switching Time Test Circuit



Note on usage : Since the 2SK4197FS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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