



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

2SK3747 — High-Voltage, High-Speed Switching Applications

Features

- Low ON-resistance, low input capacitance, ultrahigh-speed switching
- High reliability (Adoption of HVP process)
- Attachment workability is good by Mica-less package
- Avalanche resistance guarantee

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		1500	V
Gate-to-Source Voltage	V _{GSS}		±35	V
Drain Current (DC)	I _D		2	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	4	A
Allowable Power Dissipation	P _D		3.0	W
		T _c =25°C	50	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		41	mJ
Avalanche Current *2	I _{AV}		2	A

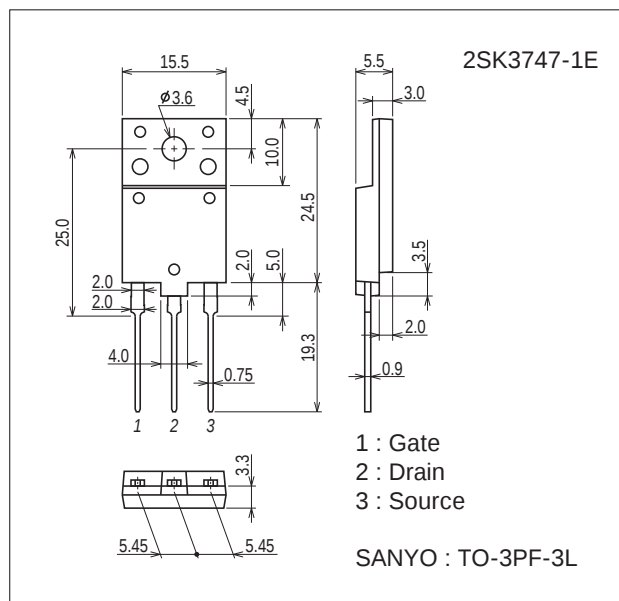
Note : *1 V_{DD}=50V, L=20mH, I_{AV}=2A (Fig.1)

*2 L≤20mH, single pulse

Package Dimensions

unit : mm (typ)

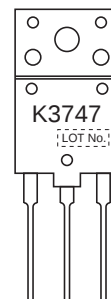
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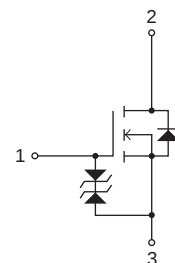
Product & Package Information

- Package : TO-3PF-3L
- JEITA, JEDEC : SC-94
- Minimum Packing Quantity : 30 pcs./magazine

Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

<http://semicon.sanyo.com/en/network>

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	1500			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=1200V, V_{GS}=0V$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2.5		3.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=20V, I_D=1A$	0.7	1.4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=1A, V_{GS}=10V$		10	13	Ω
Input Capacitance	C_{iss}	$V_{DS}=30V, f=1MHz$		380		pF
Output Capacitance	C_{oss}			70		pF
Reverse Transfer Capacitance	C_{rss}			40		pF
Turn-ON Delay Time	$t_{d(on)}$	See Fig.2		12		ns
Rise Time	t_r			37		ns
Turn-OFF Delay Time	$t_{d(off)}$			152		ns
Fall Time	t_f			59		ns
Total Gate Charge	Q_g	$V_{DS}=200V, V_{GS}=10V, I_D=2A$		37.5		nC
Gate-to-Source Charge	Q_{gs}			2.7		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			20		nC
Diode Forward Voltage	V_{SD}	$I_S=2A, V_{GS}=0V$		0.88	1.2	V

Fig.1 Avalanche Resistance Test Circuit

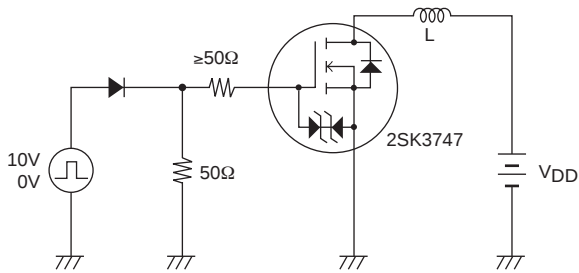
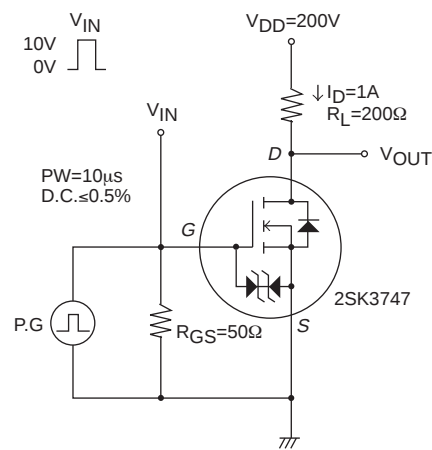
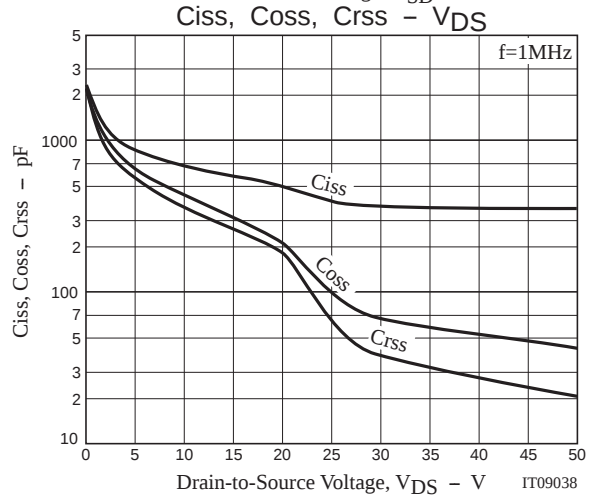
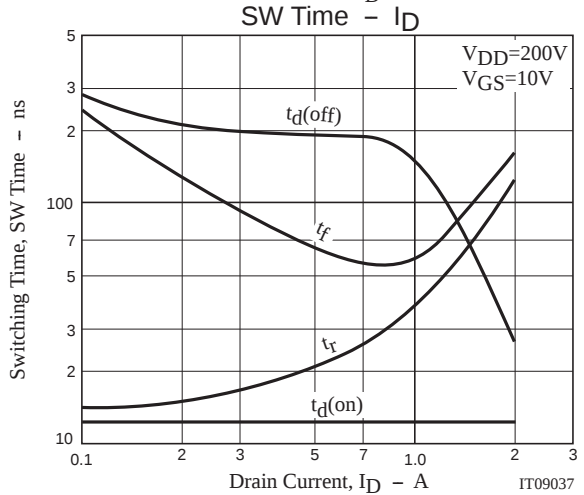
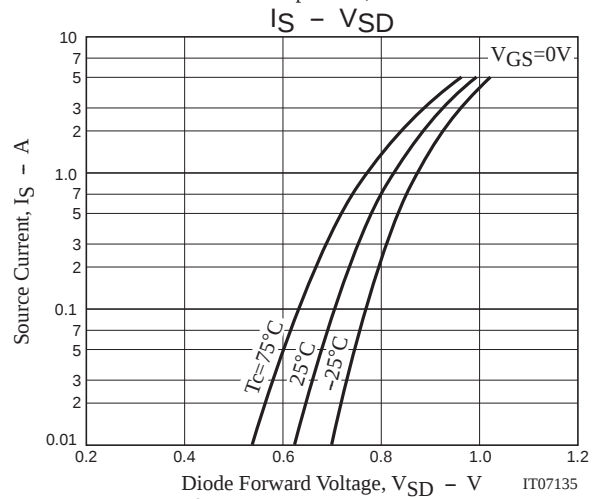
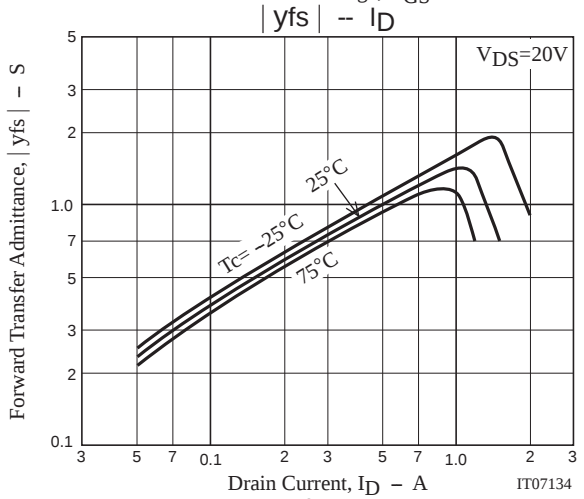
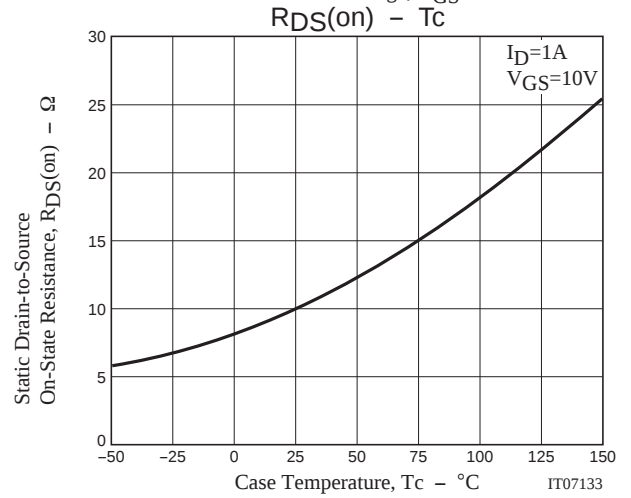
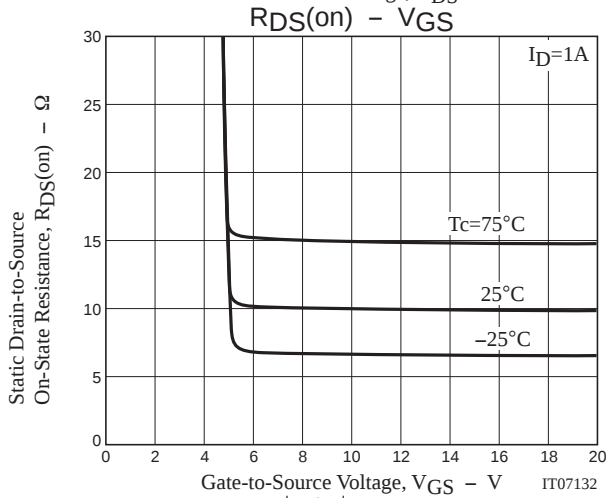
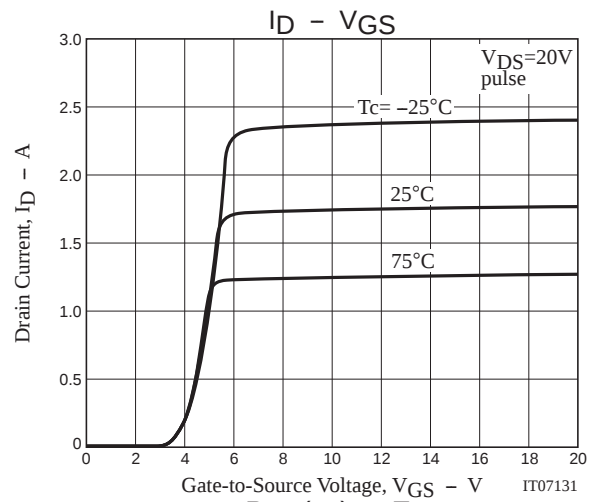
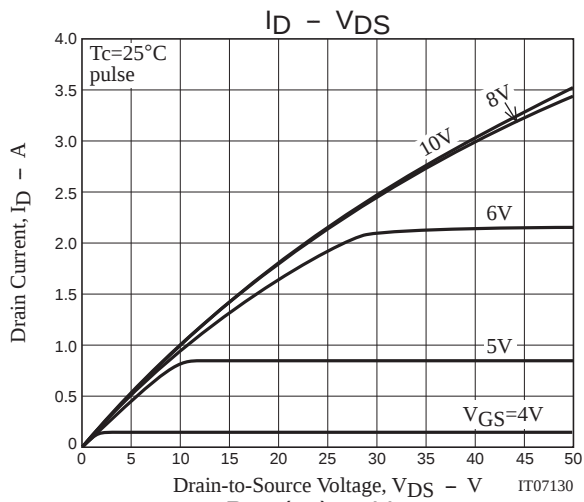


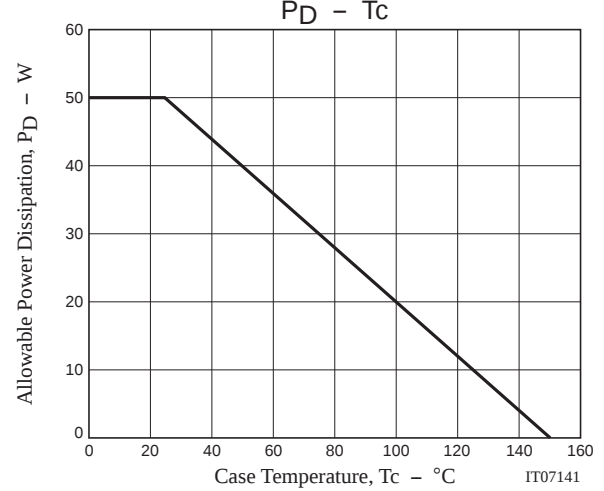
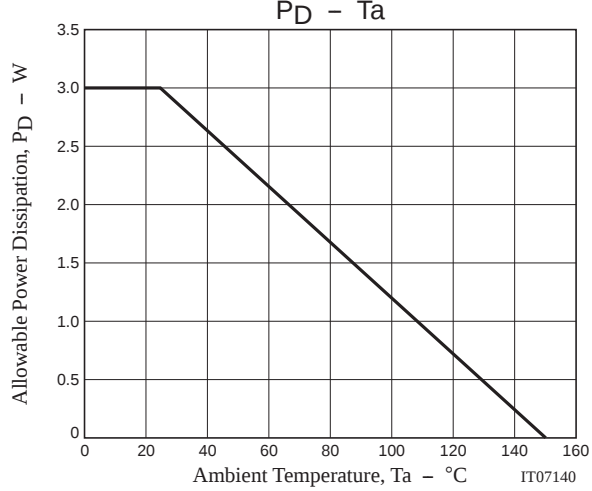
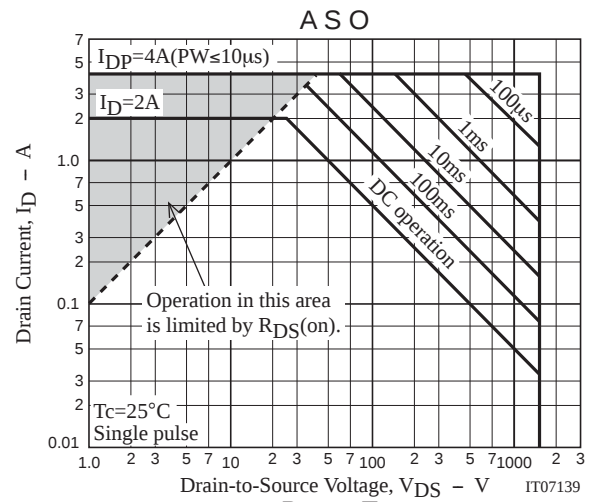
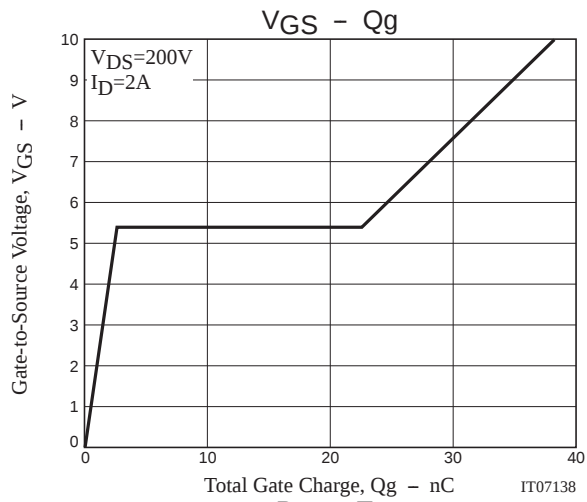
Fig.2 Switching Time Test Circuit



Ordering Information

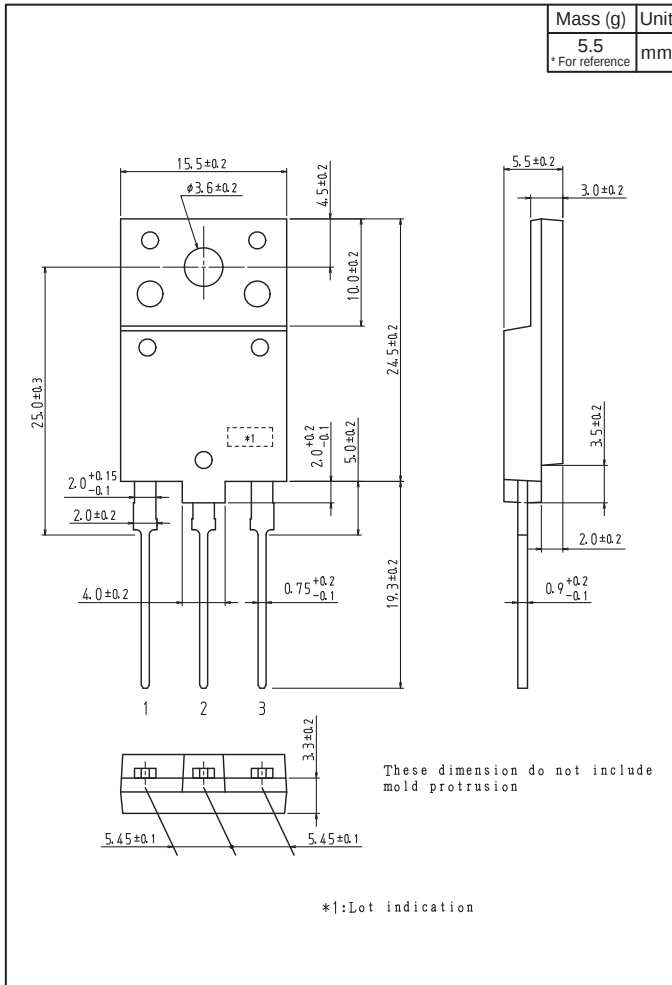
Device	Package	Shipping	memo
2SK3747-1E	TO-3PF-3L	30pcs./magazine	Pb Free





Outline Drawing

2SK3747-1E



Note on usage : Since the 2SK3747 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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