Ordering number : ENN3450B

N-Channel Silicon MOSFET

2SK1447LS

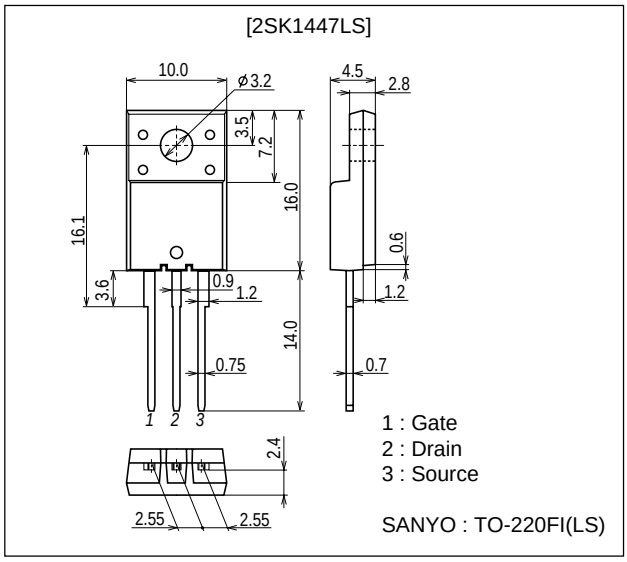
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- Micaless package facilitating mounting.

Package Dimensions

unit : mm
2078C



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		450	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_D		9	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	36	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C	40	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−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}=0	450			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=450V, V_{GS}=0			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0			±100	nA

(Note) Be careful in handling the 2SK1447LS because it has no protection diode between gate and source.
Continued on next page.

Marking : K1447

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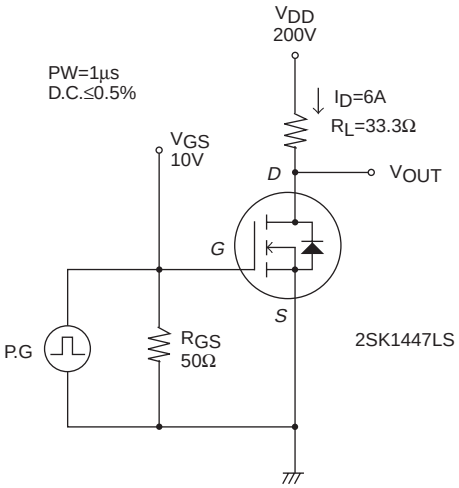
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

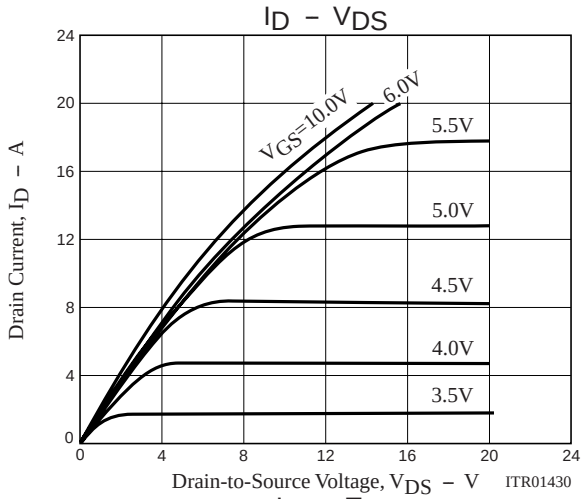
N1501 TS IM TA-3431 / 61099 TH (KT) / 72597 TS (KOTO) / 7151

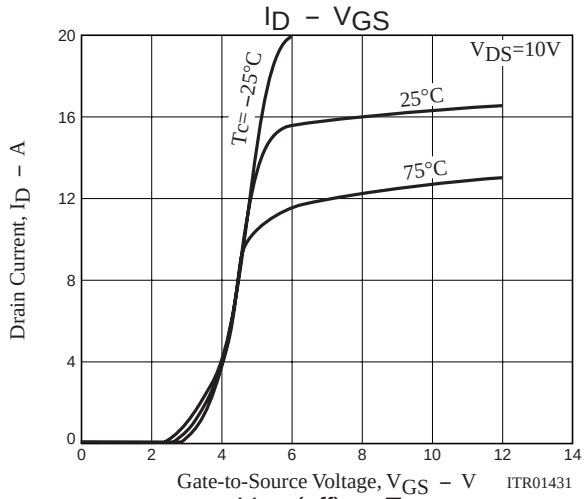
Continued from preceding page.

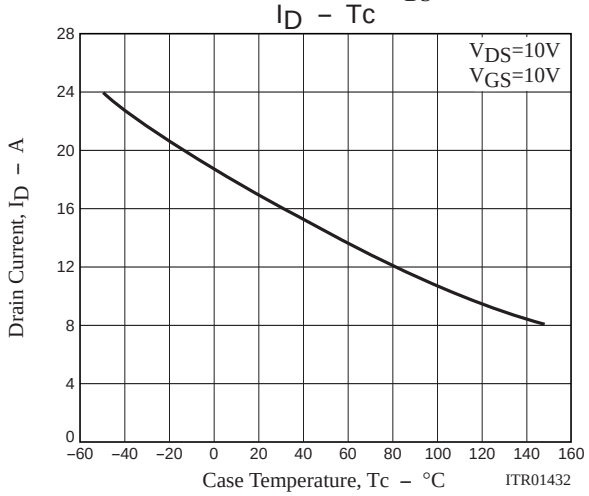
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	2.0		3.0	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=6A	4.0	8.0		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)	I_D=6A, V_{GS}=10V		0.47	0.6	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		1600		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		220		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		80		pF
Turn-ON Delay Time	t_d(on)	I_D=6A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50Ω		25		ns
Rise Time	t_r	I_D=6A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50Ω		60		ns
Turn-OFF Delay Time	t_d(off)	I_D=6A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50Ω		250		ns
Fall Time	t_f	I_D=6A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50Ω		80		ns
Diode Forward Voltage	V_{SD}	I_S=9A, V_{GS}=0			1.8	V

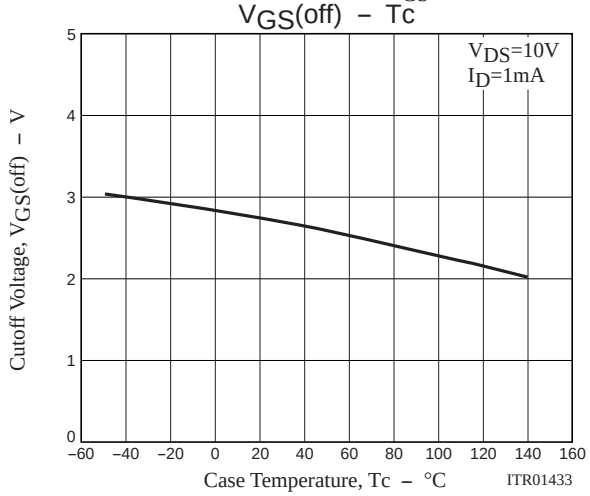
Switching Time Test Circuit



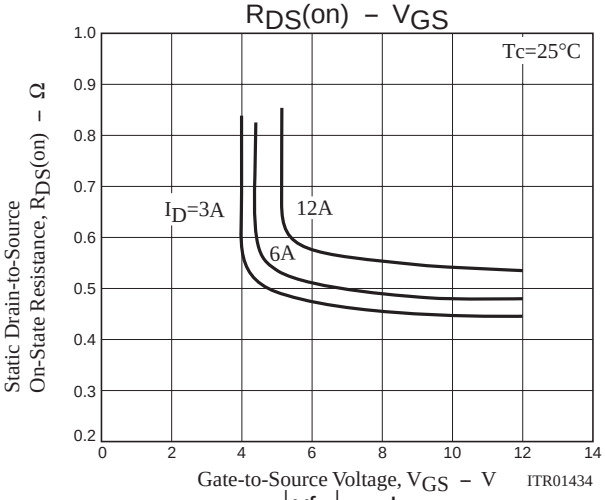




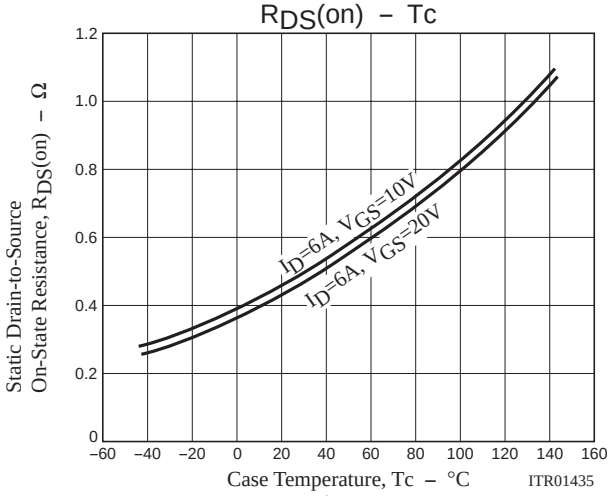




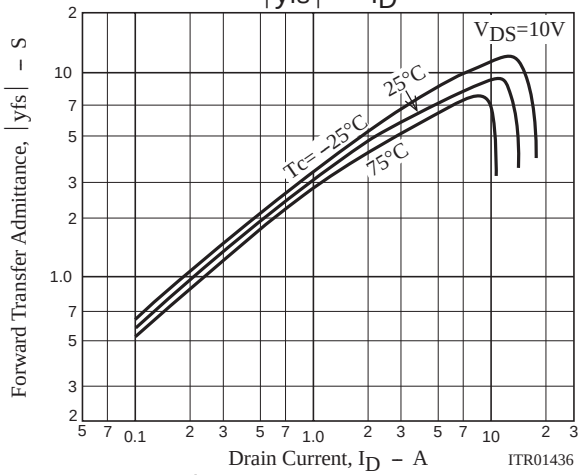
$R_{DS}(on)$ – V_{GS}



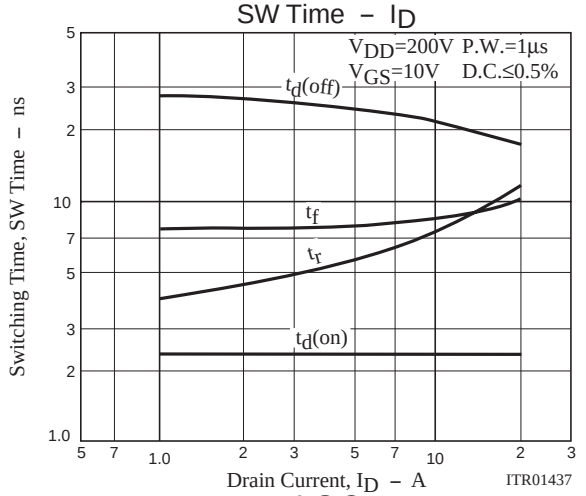
$R_{DS}(on)$ – Tc



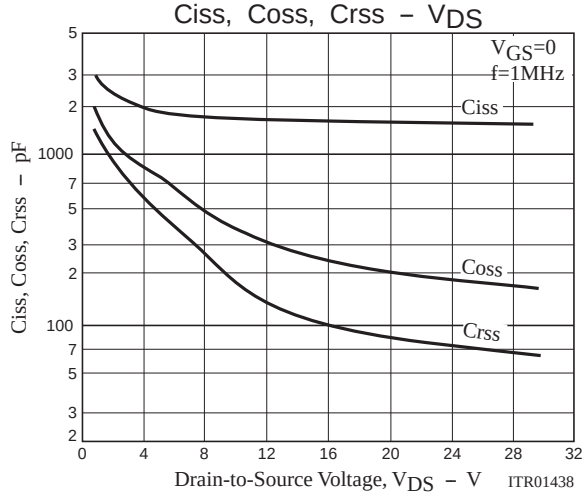
|yfs| – I_D



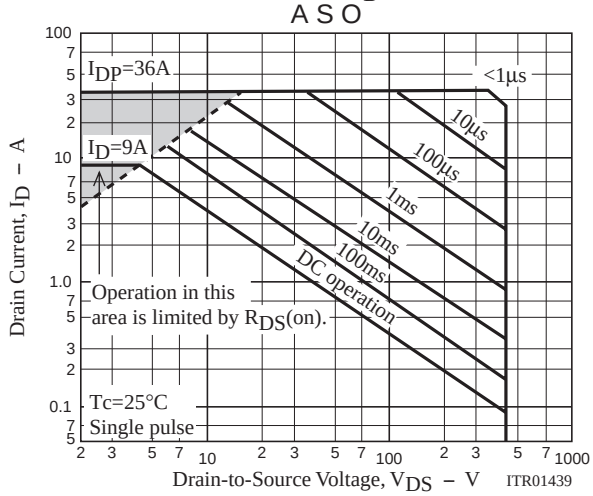
SW Time – I_D



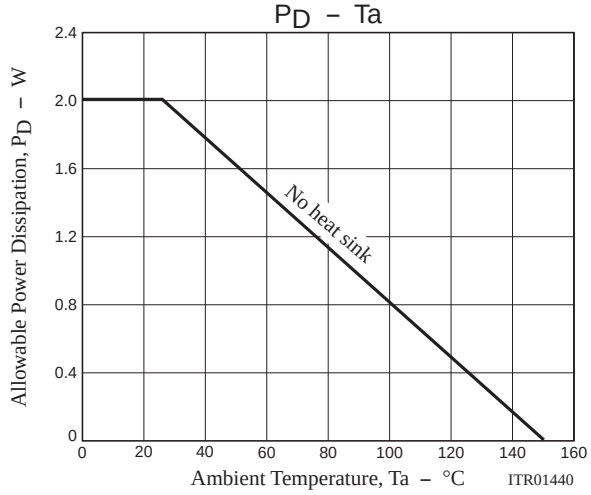
Ciss, Coss, Crss – V_{DS}



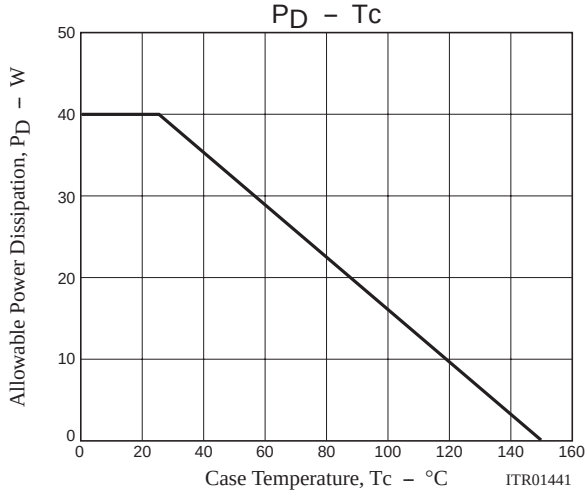
A S O



P_D – Ta



P_D – Tc



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