

**SANYO**

No.3558

**2SK1420**

N-Channel MOS Silicon FET

Very High-Speed  
Switching Applications**Features**

- Low ON-state resistance.
- Very high-speed switching.
- Converters.
- Micaless package facilitating mounting.

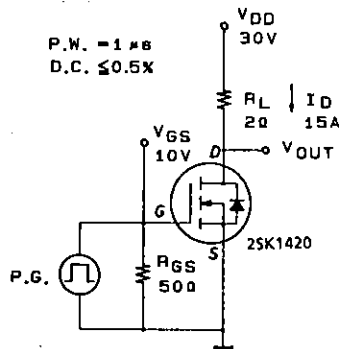
**Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$** 

Absolute Maximum Ratings at Ta= 25°C				unit
Drain to Source Voltage	V <sub>DSS</sub>		60	V
Gate to Source Voltage	V <sub>GSS</sub>		± 20	V
Drain Current(DC)	I <sub>D</sub>		25	A
Drain Current(Pulse)	I <sub>DP</sub>	PW≤ 10μs, duty cycle≤ 1%	100	A
Allowable Power Dissipation	P <sub>D</sub>	Tc= 25°C	30	W
			2.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		- 55 to + 150	°C

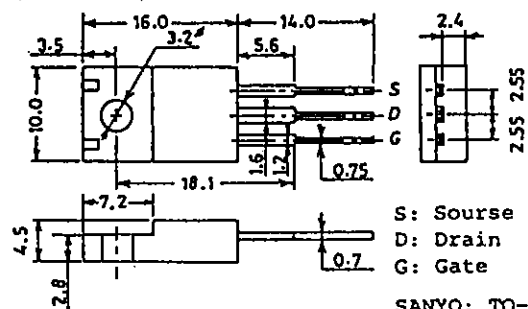
**Electrical Characteristics at  $T_a = 25^\circ\text{C}$** 

			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$ , $V_{GS} = 0$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 60\text{V}$ , $V_{GS} = 0$			100	$\mu\text{A}$
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20\text{V}$ , $V_{DS} = 0$			$\pm 100$	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}$ , $I_D = 1\text{mA}$	1.5		2.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}$ , $I_D = 15\text{A}$	10	15		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	$I_D = 15\text{A}$ , $V_{GS} = 10\text{V}$	0.035	0.045		$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 20\text{V}$ , $f = 1\text{MHz}$		1200		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 20\text{V}$ , $f = 1\text{MHz}$		550		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 20\text{V}$ , $f = 1\text{MHz}$		150		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D = 15\text{A}$ , $V_{GS} = 10\text{V}$ $V_{DD} = 30\text{V}$ , $R_{GS} = 50\Omega$		18		ns
Rise Time	$t_r$			102		ns
Turn-OFF Delay Time	$t_{d(off)}$			130		ns
Fall Time	$t_f$			90		ns
Diode Forward Voltage	$V_{SD}$	$I_S = 25\text{A}$ , $V_{GS} = 0$			1.8	V

(Note) Be careful in handling the 2SK1420 because it has no protection diode between gate and source.

**Switching Time Test Circuit****Package Dimensions 2063**

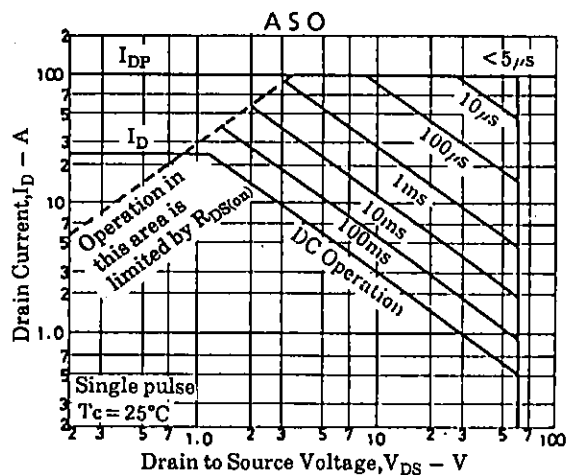
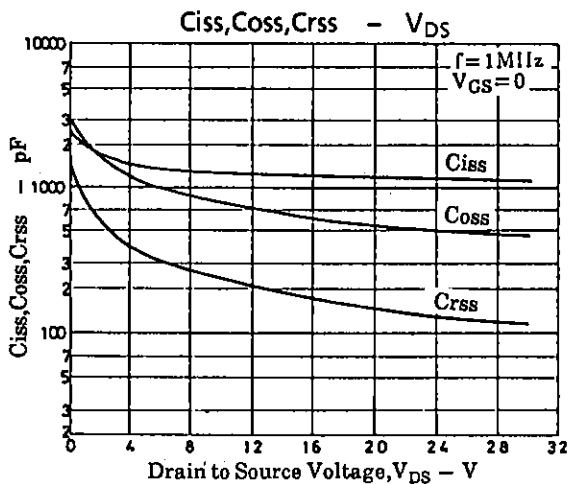
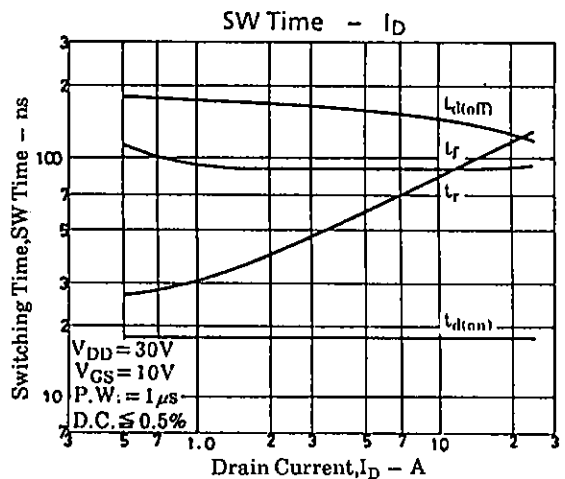
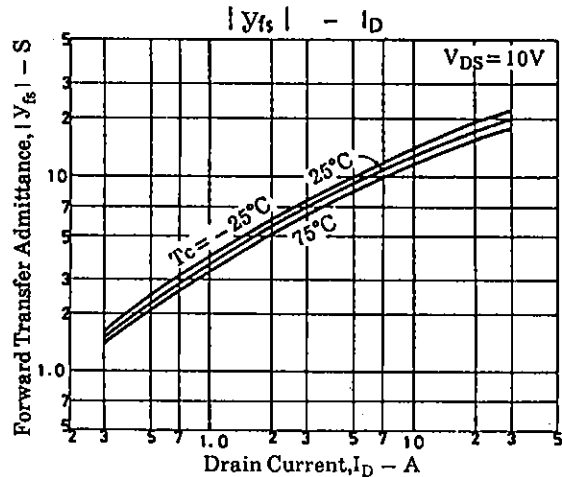
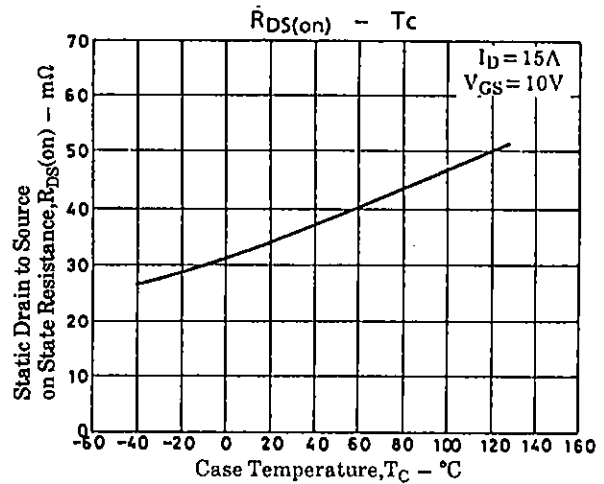
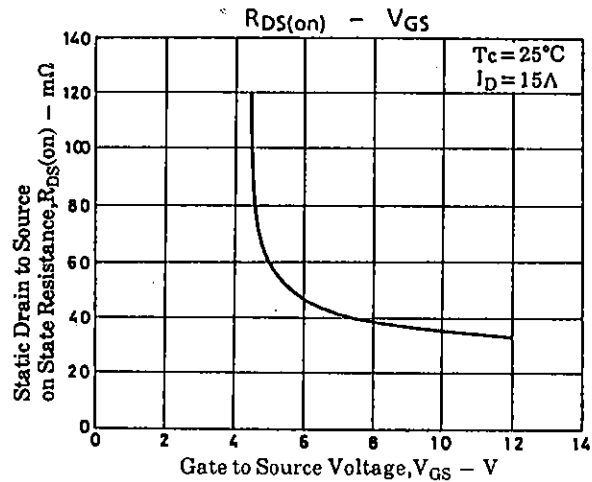
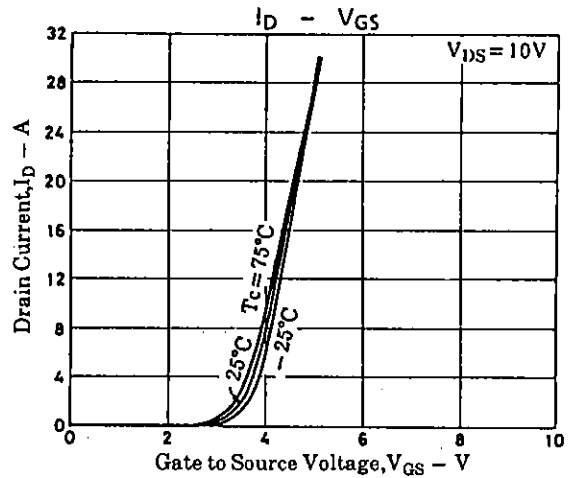
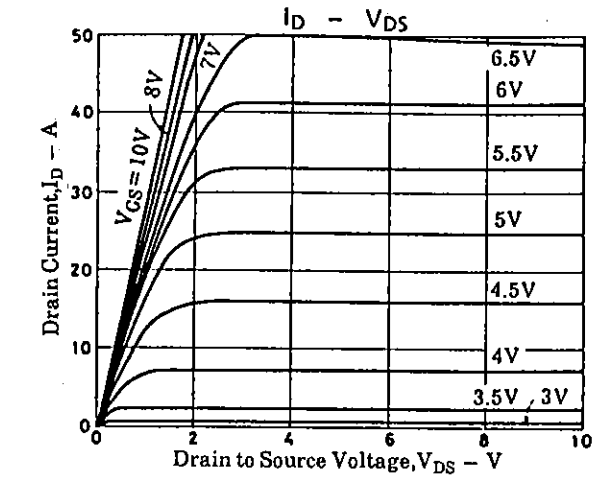
(unit : mm)

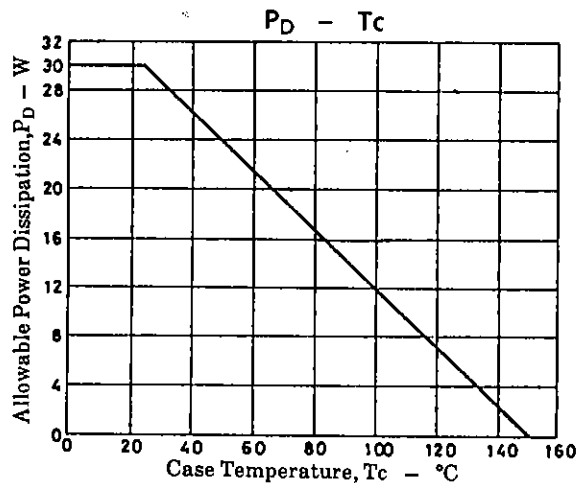
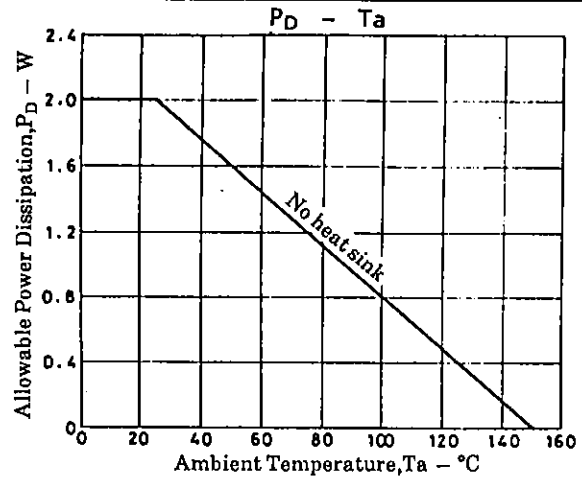
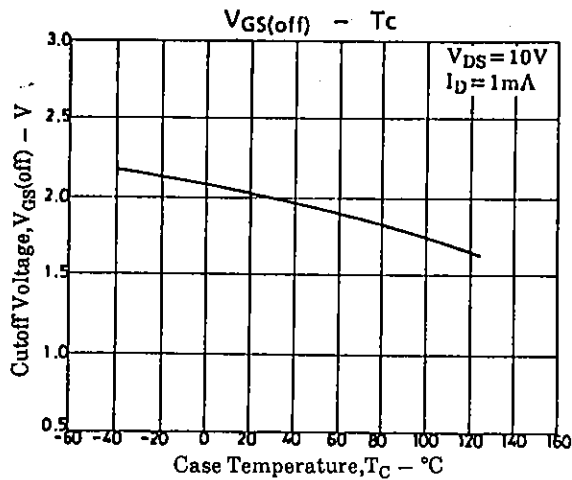


SANYO: TO-220ML

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**  
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

D151MK, (KOTO) X-6618, 8035 No.3558-1/3





■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:

- ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
- ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.