

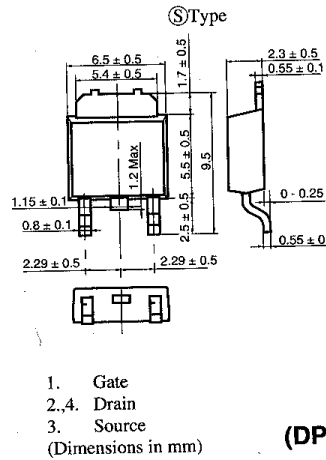
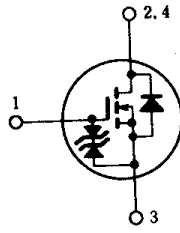
2SK1299 (L), 2SK1299 (S)

SILICON N-CHANNEL MOS FET

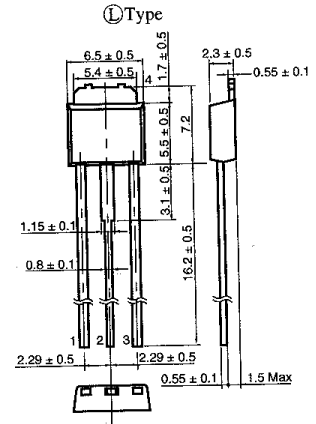
高速度電力スイッチング

■ 特長

- 低オン抵抗。
- スwitching速度が速い。
- 駆動電力が小さい。
- 低電圧駆動 (4 V 駆動が可能)。
- 用途: モータドライブ, リレー, ソレノイド駆動, DC-DC コンバータ



1. Gate
2.4. Drain
3. Source
(Dimensions in mm)



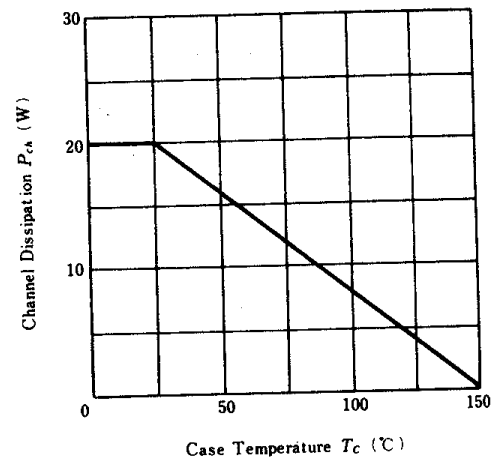
(DPAK-1)

■ ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	I_D	3	A
Drain Peak Current	$I_{D(pulse)^*}$	12	A
Body-Drain Diode Reverse Drain Current	I_{DR}	3	A
Channel Dissipation	P_{ch}^{**}	20	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

* $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$
** Value at $T_c=25^\circ\text{C}$

POWER VS. TEMPERATURE DERATING



■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}$, $V_{GS}=0$	100	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G=\pm 100\mu\text{A}$, $V_{DS}=0$	± 20	—	—	V
Gate-Source Leak Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0$	—	—	± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80\text{V}$, $V_{GS}=0$	—	—	100	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=1\text{mA}$, $V_{DS}=10\text{V}$	1.0	—	2.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D=2\text{A}$, $V_{GS}=10\text{V}^*$	—	0.25	0.35	Ω
		$I_D=2\text{A}$, $V_{GS}=4\text{V}^*$	—	0.30	0.45	Ω
Forward Transfer Admittance	$ y_{fs} $	$I_D=2\text{A}$, $V_{DS}=10\text{V}^*$	2.4	4.0	—	S
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}$, $V_{GS}=0$, $f=1\text{MHz}$	—	400	—	pF
Output Capacitance	C_{oss}		—	165	—	pF
Reverse Transfer Capacitance	C_{rss}		—	45	—	pF
Turn-on Delay Time	$t_{d(on)}$	$I_D=2\text{A}$, $V_{GS}=10\text{V}$, $R_L=15\Omega$	—	5	—	ns
Rise Time	t_r		—	35	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	160	—	ns
Fall Time	t_f		—	60	—	ns
Body-Drain Diode Forward Voltage	V_{DF}		$I_F=3\text{A}$, $V_{GS}=0$	—	1.0	—
Body-Drain Diode Reverse Recovery Time	t_{rr}	$I_F=3\text{A}$, $V_{GS}=0$, $di_F/dt=50\text{A}/\mu\text{s}$	—	135	—	ns

* Pulse Test