

2SK3995

Silicon N-channel enhancement MOSFET

For high speed switching circuits

For PDP

■ Features

- Medium breakdown voltage: $V_{DSS} = 200\text{ V}$, $I_D = 30\text{ A}$
- Low ON resistance, optimum for PDP panel drive

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

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	200	V
Gate-source surrender voltage	V_{GSS}	± 30	V
Drain current	I_D	30	A
Peak drain current *1	I_{DP}	120	A
Drain reverse current	I_{DR}	30	A
Peak drain reverse current *1	I_{DRP}	120	A
Avalanche energy capability *2	EAS	801	mJ
Drain power dissipation	$T_C = 25^\circ\text{C}$	50	W
	$T_a = 25^\circ\text{C}$ *3	1.4	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *1: $PW \leq 10\ \mu\text{s}$, Duty $\leq 1.0\%$

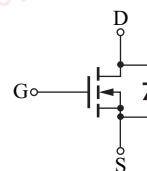
*2: Avalanche energy capability guaranteed

*3: Without heat sink

■ Package

- Code
TO-220C-G1
- Marking Symbol: K3995
- Pin Name
 1. Gate
 2. Drain
 3. Source

■ Internal Connection



■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

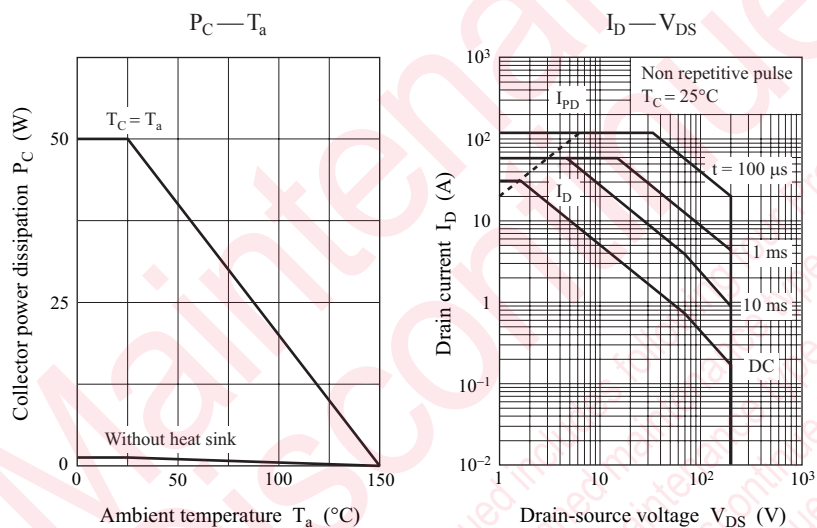
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = 1\text{ mA}$, $V_{GS} = 0$	200			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = 160\text{ V}$, $V_{GS} = 0$			10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 30\text{ V}$, $V_{DS} = 0$			± 1.0	μA
Gate threshold voltage	V_{th}	$V_{DS} = 10\text{ V}$, $I_D = 1.0\text{ mA}$	2.5		4.5	V
Drain-source ON resistance	$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 15.0\text{ A}$		43	52	$\text{m}\Omega$
Forward transfer conductance	$ Y_{fs} $	$V_{DS} = 10\text{ V}$, $I_D = 15.0\text{ A}$	12	22		S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = 25\text{ V}$, $V_{GS} = 0$, $f = 1\text{ MHz}$		1970		pF
Short-circuit output capacitance (Common source)	C_{oss}			400		pF
Reverse transfer capacitance (Common source)	C_{rss}			85		pF
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 100\text{ V}$, $I_D = 15.0\text{ A}$ $R_L = 6.7\ \Omega$, $V_{GS} = 10\text{ V}$		32		ns
Rise time	t_r			130		ns
Turn-off delay time	$t_{d(off)}$			170		ns
Fall time	t_f			88		ns

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

■ Electrical Characteristics (continued) $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

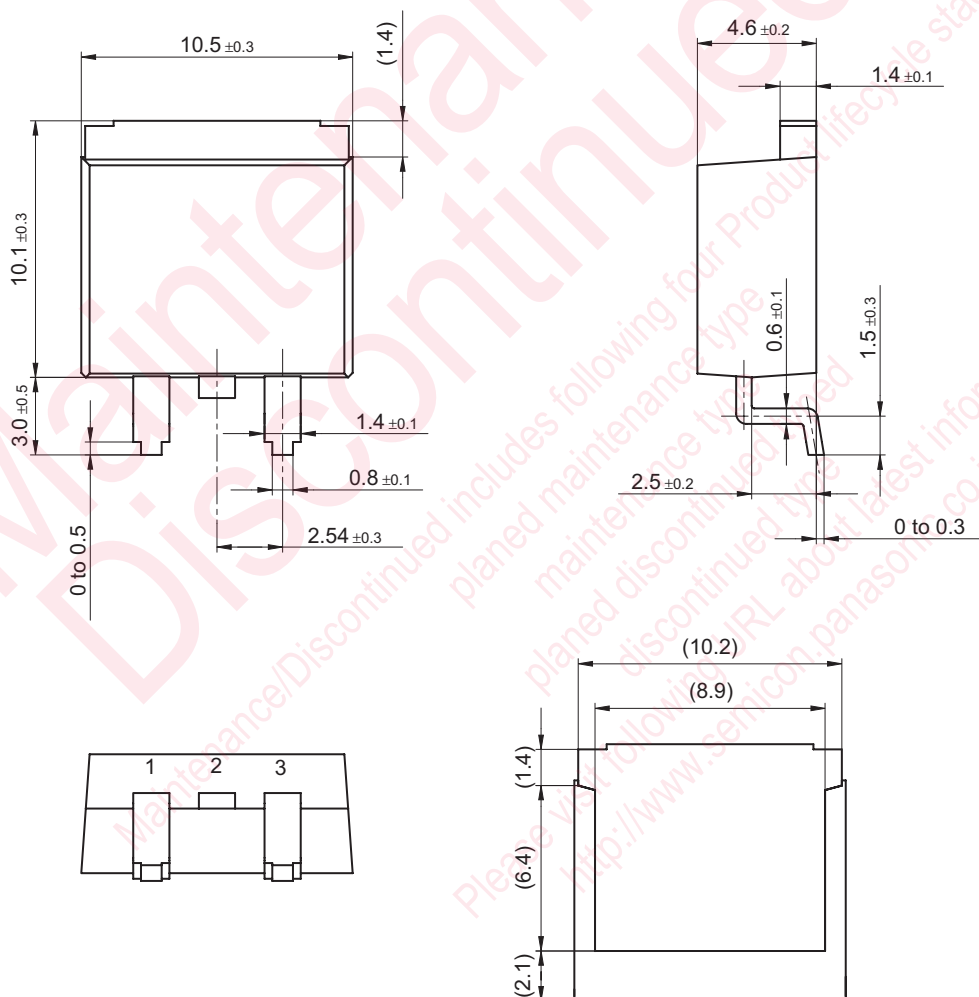
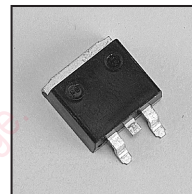
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode forward voltage	V_{DSF}	$I_{DR} = 30\text{ A}, V_{GS} = 0$			-1.5	V
Reverse recovery time	t_{rr}	$L = 230\ \mu\text{H}, V_{DD} = 100\text{ V}$		220		ns
Reverse recovery charge	Q_{rr}	$I_{DR} = 15.0\text{ A}, d_i/d_t = 100\text{ A}/\mu\text{s}$		1.1		μC
Gate charge load	Q_g	$V_{DD} = 100\text{ V}, I_D = 15.0\text{ A}, V_{GS} = 10\text{ V}$		66		nC
Gate-source charge	Q_{gs}			11		nC
Gate-drain charge	Q_{gd}			37		nC
Thermal resistance (ch-c)	$R_{th(ch-c)}$				2.5	$^\circ\text{C}/\text{W}$
Thermal resistance (ch-a)	$R_{th(ch-a)}$				89.2	$^\circ\text{C}/\text{W}$

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



TO-220C-G1

Unit: mm



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