This product complies with the RoHS Directive (EU 2002/95/EC).

2SK3995

Silicon N-channel enhancement MOSFET

For high speed switching circuits
For PDP

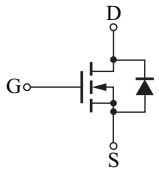
■ Features

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

■ Package

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

■ Internal Connection



■ Absolute Maximum Ratings T_a = 25°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°C	P_D	50	W
	T_a = 25°C *3		1.4	W
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	-55 to +150	°C

Note) *1: PW ≤ 10 µs, Duty ≤ 1.0%
*2: Avalanche energy capability guaranteed
*3: Without heat sink

■ Electrical Characteristics T_C = 25°C±3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0	200			V
Drain-source cutoff current	I_{DSS}	V_{DS} = 160 V, V_{GS} = 0			10	µA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±30 V, V_{DS} = 0			±1.0	µA
Gate threshold voltage	V_{th}	V_{DS} = 10 V, I_D = 1.0 mA	2.5		4.5	V
Drain-source ON resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 15.0 A		43	52	mΩ
Forward transfer conductance	$\|Y_{fs}\|$	V_{DS} = 10 V, I_D = 15.0 A	12	22		S
Short-circuit input capacitance (Common source)	C_{iss}	V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz		1 970		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 V, I_D = 15.0 A R_L = 6.7 Ω, V_{GS} = 10 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.

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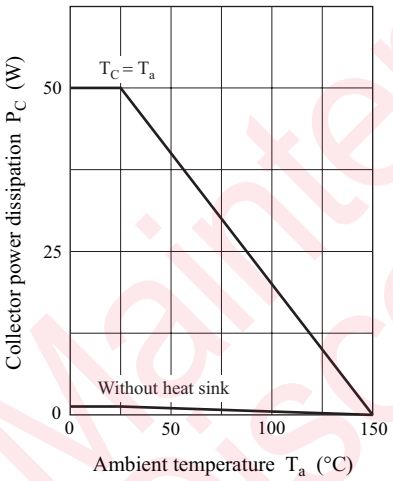
■ Electrical Characteristics (continued) $T_C = 25°C \pm 3°C$

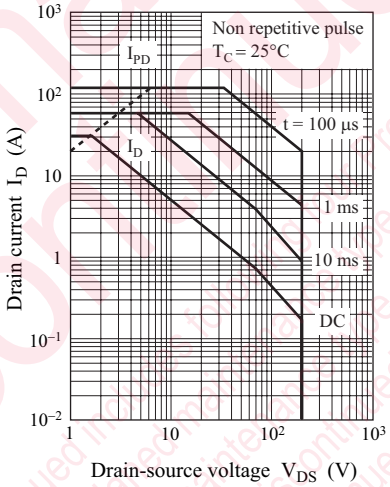
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode forward voltage	V_{DSF}	$I_{DR} = 30$ A, $V_{GS} = 0$			−1.5	V
Reverse recovery time	t_{rr}	L = 230 µH, $V_{DD} = 100$ V		220		ns
Reverse recovery charge	Q_{rr}	$I_{DR} = 15.0$ A, $d_i / d_t = 100$ A/µs		1.1		µC
Gate charge load	Q_g	$V_{DD} = 100$ V, $I_D = 15.0$ A, $V_{GS} = 10$ 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	°C/W
Thermal resistance (ch-a)	$R_{th(ch-a)}$				89.2	°C/W

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

P_C — T_a



I_D — V_{DS}



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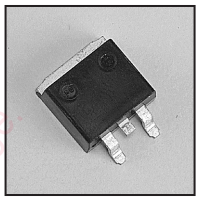
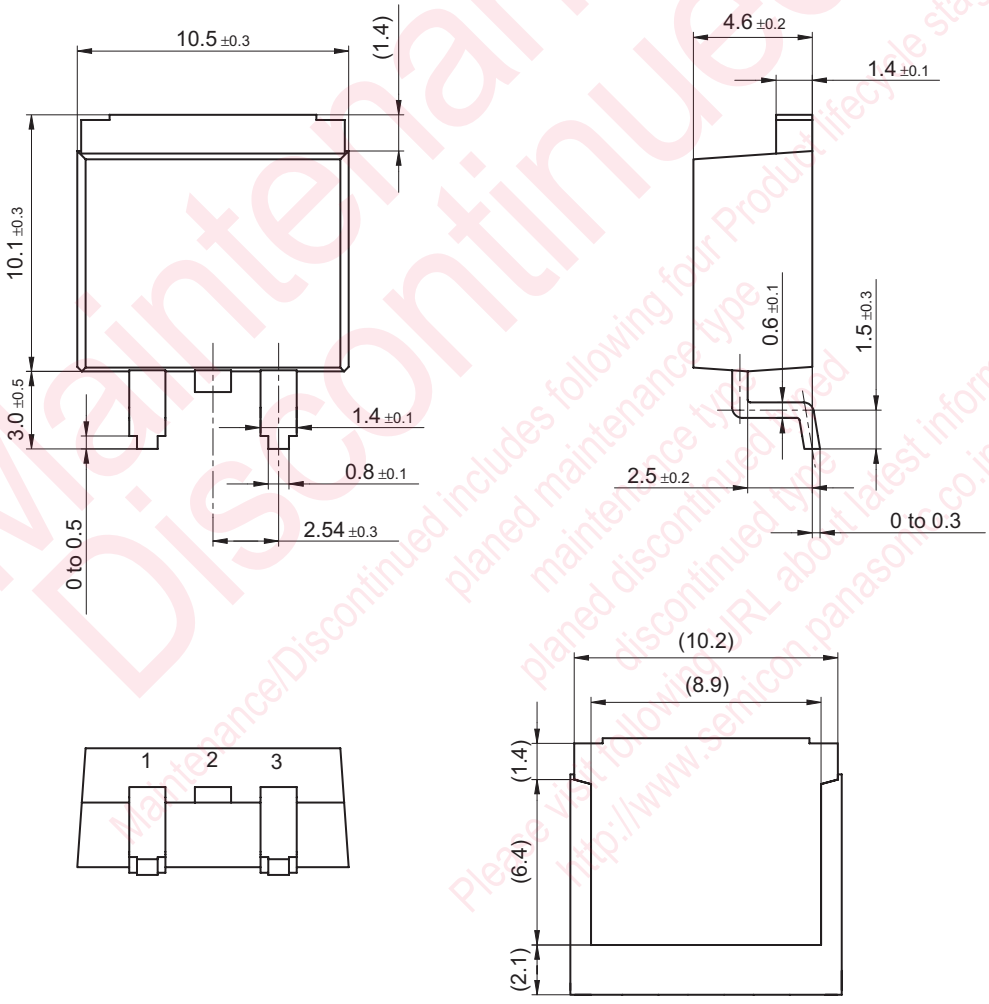
Unit: mm





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