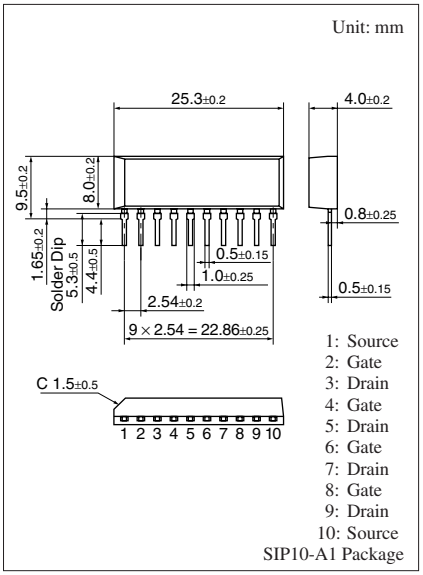
PUB4702

Silicon n-channel power MOSFET

For switching

■ Features

- Avalanche energy capacity guaranteed
- High-speed switching
- Low ON resistance
- No secondary surrender
- Low-voltage drive
- Zener diodes built-in



■ Absolute Maximum Ratings $T_C = 25°C$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	35±10	V
Gate-source voltage (D-S short)	V_{GSS}	±15	V
Drain current	I_D	±1	A
		±2	
Avalanche energy capability *2	EAS	2.5	mJ
Power dissipation	P_D	15	W
$T_a = 25°C$		3.5	
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

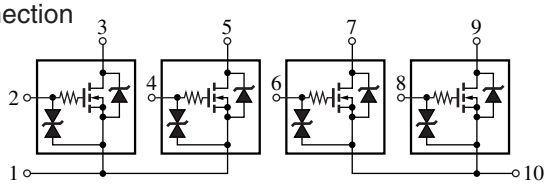
Note) ∗: L = 5 mH, I_L = 1 A, 1 pulse

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

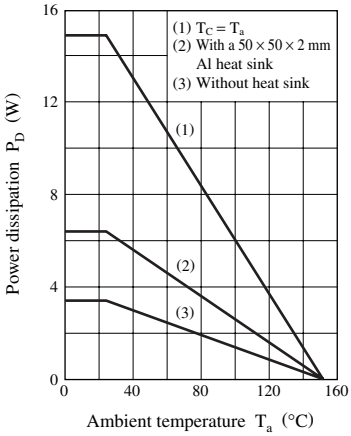
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0	25		45	V
Gate threshold voltage	V_{th}	V_{DS} = 10 V, I_D = 1 mA	1.0		2.5	V
Diode forward voltage	V_{DF}	I_{DR} = 1 A, V_{GS} = 0			−1.5	V
Drain-source cutoff current (G-S short)	I_{DSS}	V_{DS} = 25 V, V_{GS} = 0			10	μA
Gate-source cutoff current (D-S short)	I_{GSS}	V_{GS} = ±15 V, V_{DS} = 0			±10	μA
Drain-source ON resistance	$R_{DS(on)1}$	V_{GS} = 10 V, I_D = 0.5 A		220	380	mΩ
	$R_{DS(on)2}$	V_{GS} = 4 V, I_D = 0.5 A		390	680	
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS} = 10 V, I_D = 0.5 A	0.6	1.0		S
Short-circuit forward transfer capacitance (Common-source)	C_{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz		135		pF
Short-circuit output capacitance (Common-source)	C_{oss}			85		pF
Reverse transfer capacitance (Common-source)	C_{rss}			50		pF
Turn-on time	t_{on}	V_{DD} = 25 V, I_D = 0.5 A, R_L = 50 Ω		120		ns
Fall time	t_f	V_{GS} = 10 V		390		ns
Turn-off delay time	$t_{d(off)}$			800		ns

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

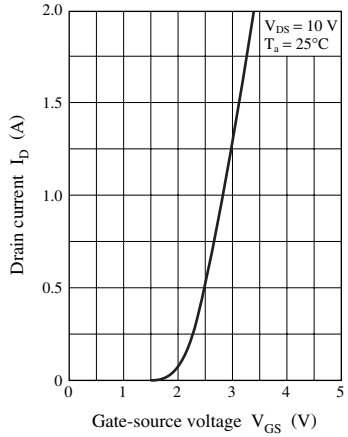
■ Internal Connection



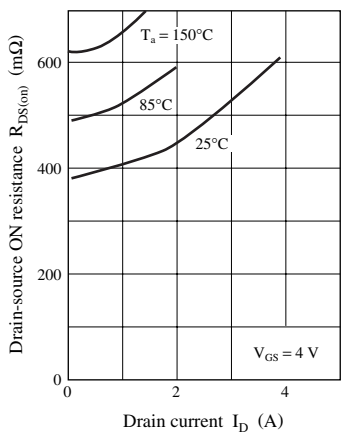
P_D — T_a



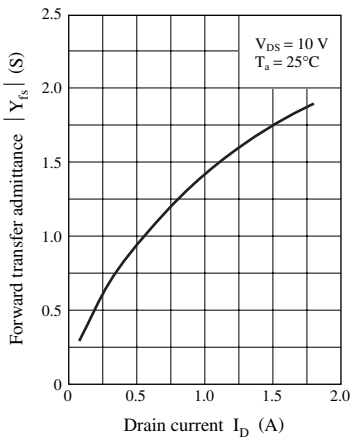
I_D — V_{GS}



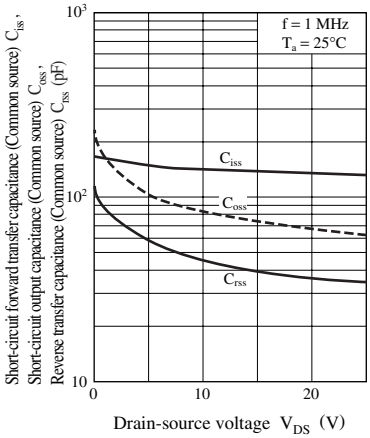
$R_{DS(on)}$ — I_D



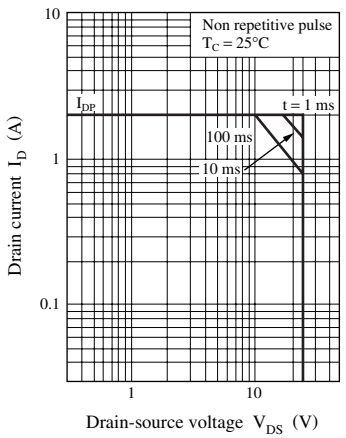
$|Y_{fs}|$ — I_D



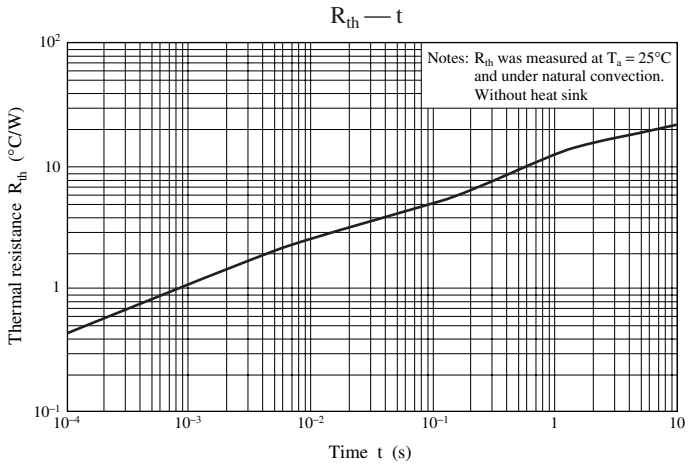
C_{iss} , C_{oss} , C_{rss} — V_{DS}



Safe operation area



R_{th} — t



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