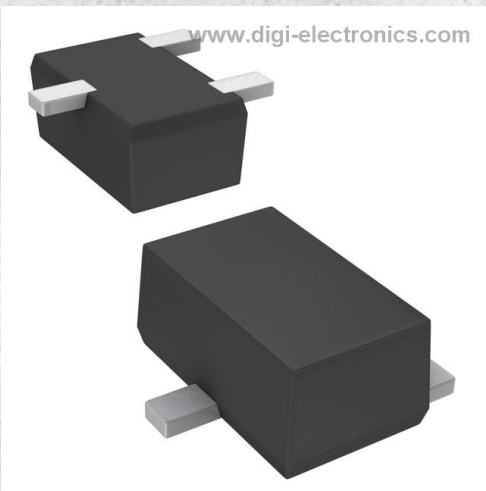
MTM231230L Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	MTM231230L-DG
Manufacturer	Panasonic Electronic Components
Manufacturer Product Number	MTM231230L
Description	MOSFET P-CH 20V 3A SMINI3-G1
Detailed Description	P-Channel 20 V 3A (Ta) 500mW (Ta) Surface Mount SMini3-G1

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MTM231230L	Panasonic Electronic Components
Series:	Product Status:
-	Obsolete
FET Type:	Technology:
P-Channel	MOSFET (Metal Oxide)
Drain to Source Voltage (Vdss):	Current - Continuous Drain (Id) @ 25°C:
20 V	3A (Ta)
Drive Voltage (Max Rds On, Min Rds On):	Rds On (Max) @ Id, Vgs:
2.5V, 4.5V	55mOhm @ 1A, 4V
Vgs(th) (Max) @ Id:	Vgs (Max):
1.3V @ 1mA	±10V
Input Capacitance (Ciss) (Max) @ Vds:	FET Feature:
1000 pF @ 10 V	-
Power Dissipation (Max):	Operating Temperature:
500mW (Ta)	150°C (TJ)
Mounting Type:	Supplier Device Package:
Surface Mount	SMini3-G1
Package / Case:	
SC-70, SOT-323	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	ECCN:
1 (Unlimited)	EAR99
HTSUS:	
8541.21.0095	

MTM23123

Silicon P-channel MOSFET

For digital circuits

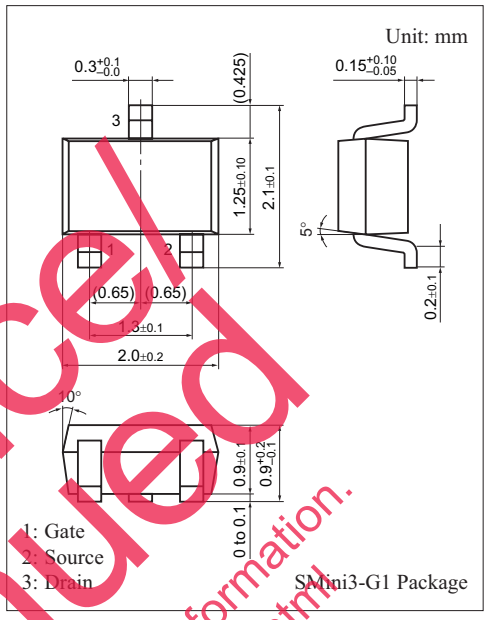
■ Features

- Low voltage drive (2.5 V, 4 V)
- Realization of low on-resistance, using extremely fine process

■ Absolute Maximum Ratings $T_a = 25°C$

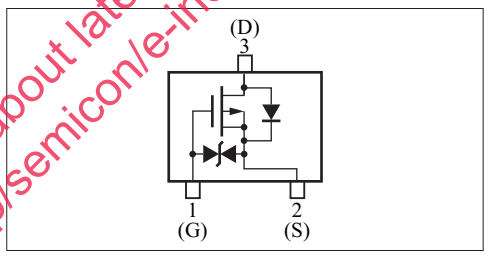
Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	–20	V
Gate-source surrender voltage	V_{GSS}	±10	V
Drain current	I_D	–3.0	A
Peak drain current *1	I_{DP}	–16	A
Power dissipation *2	P_D	500	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

Note) *1: Pulse width ≤ 10 µs, Duty Cycle ≤ 1%
*2: Measuring on ceramic substrate at 40 mm × 38 mm × 0.1 mm
Absolute maximum rating without heat sink for P_D is 150 mW



Marking Symbol: BL

Internal Connection



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

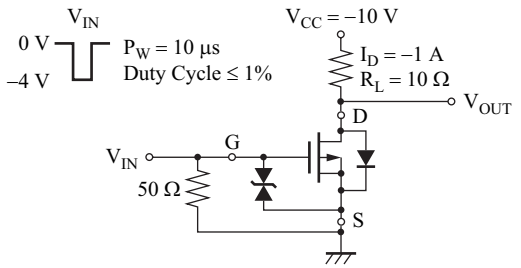
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = -1$ mA, $V_{GS} = 0$	–20			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = -20$ V, $V_{GS} = 0$			–1.0	µA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 8$ V, $V_{DS} = 0$			±10	µA
Gate threshold voltage	V_{TH}	$I_D = -1.0$ mA, $V_{DS} = -10.0$ V	– 0.4	– 0.85	–1.3	V
Drain-source ON resistance *1	$R_{DS(on)}$	$I_D = -1$ A, $V_{GS} = -4.0$ V		40	55	mΩ
		$I_D = -0.5$ A, $V_{GS} = -2.5$ V		45	70	
Forward transfer admittance *1	$\|Y_{fs}\|$	$I_D = -1.0$ A, $V_{DS} = -10$ V, f = 1 kHz	3.5			S
Short-circuit forward transfer capacitance (Common source)	C_{iss}	$V_{DS} = -10$ V, $V_{GS} = 0$, f = 1 MHz		1 000		pF
Short-circuit output capacitance (Common source)	C_{oss}			120		pF
Reverse transfer capacitance (Common source)	C_{rss}			120		pF
Turn-on delay time *2	$t_{d(on)}$	$V_{DD} = -10$ V, $V_{GS} = 0$ V to –4 V, $I_D = -1$ A		25		ns
Rise time *2	t_r	$V_{DD} = -10$ V, $V_{GS} = 0$ V to –4 V, $I_D = -1$ A		25		ns
Fall time *2	t_f	$V_{DD} = -10$ V, $V_{GS} = -4$ V to 0 V, $I_D = -1$ A		70		ns
Turn-off delay time *2	$t_{d(off)}$	$V_{DD} = -10$ V, $V_{GS} = -4$ V to 0 V, $I_D = -1$ A		120		ns

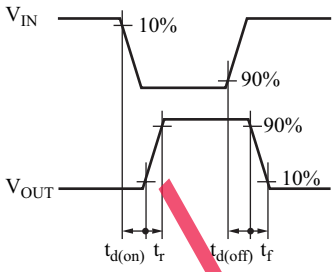
■ Electrical Characteristics (continued) $T_a = 25°C \pm 3°C$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

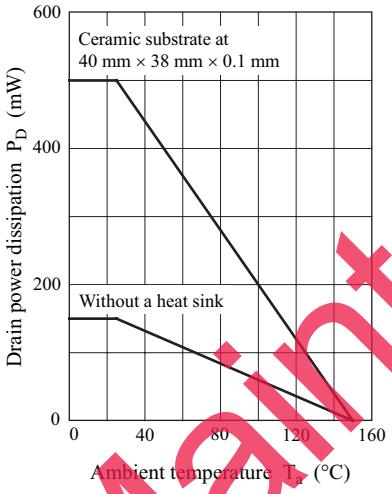
2. ∗1: Pulse measurement: Pulse width < 300 µs, Duty Cycle < 2.0%

∗2: Measurement circuit



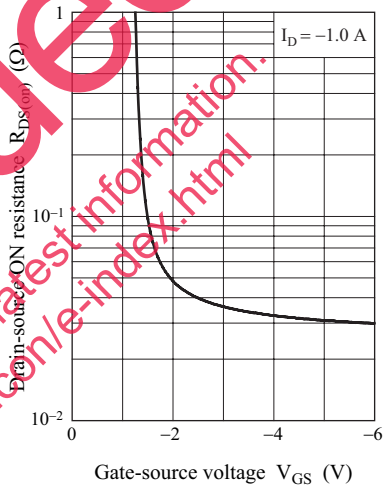


P_D — T_a

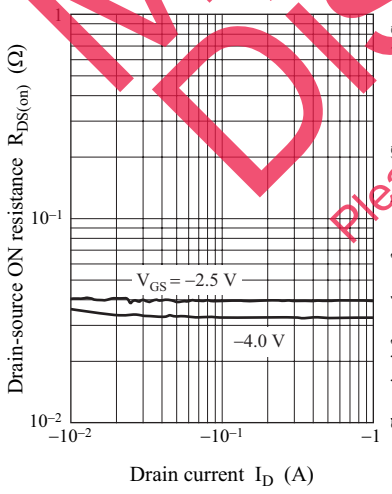


I_D — V_{GS}

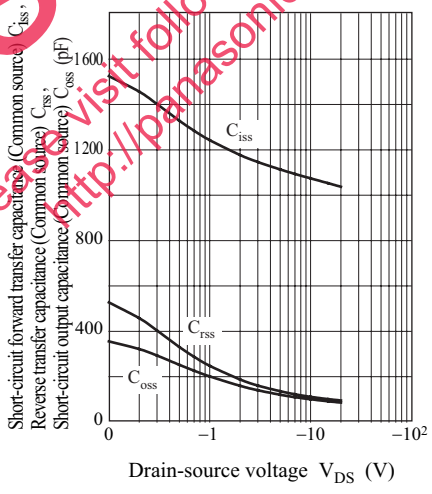
$R_{DS(on)}$ — V_{GS}



$R_{DS(on)}$ — I_D



C_{iss}, C_{rss}, C_{oss} — V_{DS}



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(6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.

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