

# MTM15624

Silicon P-channel MOS FET (FET)  
Silicon epitaxial planar type (SBD)

For switching circuits

■ Overview

MTM15624 is the composite MOS FET (P-channel MOS FET and Schottky Barrier Diode) that is highly suitable for switching circuits.

■ Features

- Built-in schottky barrier diode:  $V_R = 20\text{ V}$ ,  $I_F = 700\text{ mA}$
- Low on-resistance:  $R_{on} = 100\text{ m}\Omega$  ( $V_{GS} = -4.0\text{ V}$ )
- Low short-circuit input capacitance (Common source):  $C_{iss} = 400\text{ pF}$

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

	Parameter	Symbol	Rating	Unit
FET	Drain-source surrender voltage	$V_{DSS}$	-20	V
	Gate-source surrender voltage	$V_{GSS}$	$\pm 10$	V
	Drain current	$I_D$	-2.1	A
	Peak drain current	$I_{DP}$	-8	A
	Channel temperature	$T_{ch}$	125	$^\circ\text{C}$
	Storage temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$
SBD	Reverse voltage	$V_R$	20	V
	Forward current (Average)	$I_{F(AV)}$	700	mA
	Junction temperature	$T_j$	125	$^\circ\text{C}$
	Storage temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$
Overall	Total power dissipation*	$P_D$	600	mW

Note) \*: Measuring on ceramic substrate at 40 mm × 38 mm × 0.1 mm  
Absolute maximum rating without heat sink for  $P_D$  is 300 mA

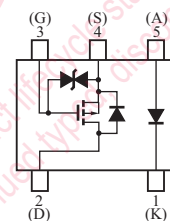
■ Package

- Code  
Mini5-G1
- Pin Name
 

1: Cathode	4: Source
2: Drain	5: Anode
3: Gate	

■ Marking Symbol: KL

■ Internal Connection



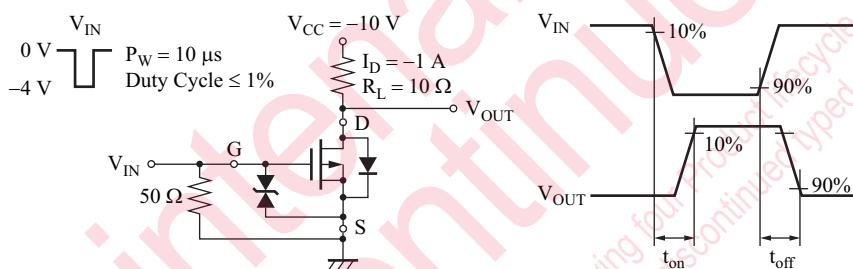
■ Electrical Characteristics  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

• FET

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	$V_{DSS}$	$I_D = -1 \text{ mA}, V_{GS} = 0$	-20			V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = -20 \text{ V}, V_{GS} = 0$			-1.0	$\mu\text{A}$
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 8 \text{ V}, V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Gate threshold voltage	$V_{TH}$	$I_D = -1.0 \text{ mA}, V_{DS} = -10 \text{ V}$	-0.4	-0.85	-1.3	V
Drain-source ON resistance	$R_{DS(on)}$	$I_D = -1 \text{ A}, V_{GS} = -4.0 \text{ V}$		100	130	m $\Omega$
		$I_D = -0.5 \text{ A}, V_{GS} = -2.5 \text{ V}$		130	200	
Forward transfer admittance	$ Y_{fs} $	$I_D = -1.0 \text{ A}, V_{DS} = -10 \text{ V}$	3.0			S
Short-circuit input capacitance (Common source)	$C_{iss}$	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		400		pF
Short-circuit output capacitance (Common source)	$C_{oss}$				40	pF
Reverse transfer capacitance (Common source)	$C_{rss}$				35	pF
Turn-on time *	$t_{on}$	$V_{DD} = -10 \text{ V}, V_{GS} = 0 \text{ V to } -4 \text{ V}, I_D = -1 \text{ A}$		35		ns
Turn-off time *	$t_{off}$	$V_{DD} = -10 \text{ V}, V_{GS} = -4 \text{ V to } 0 \text{ V}, I_D = -1 \text{ A}$		100		ns

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

2. \*:  $t_{on}, t_{off}$  measurement circuit



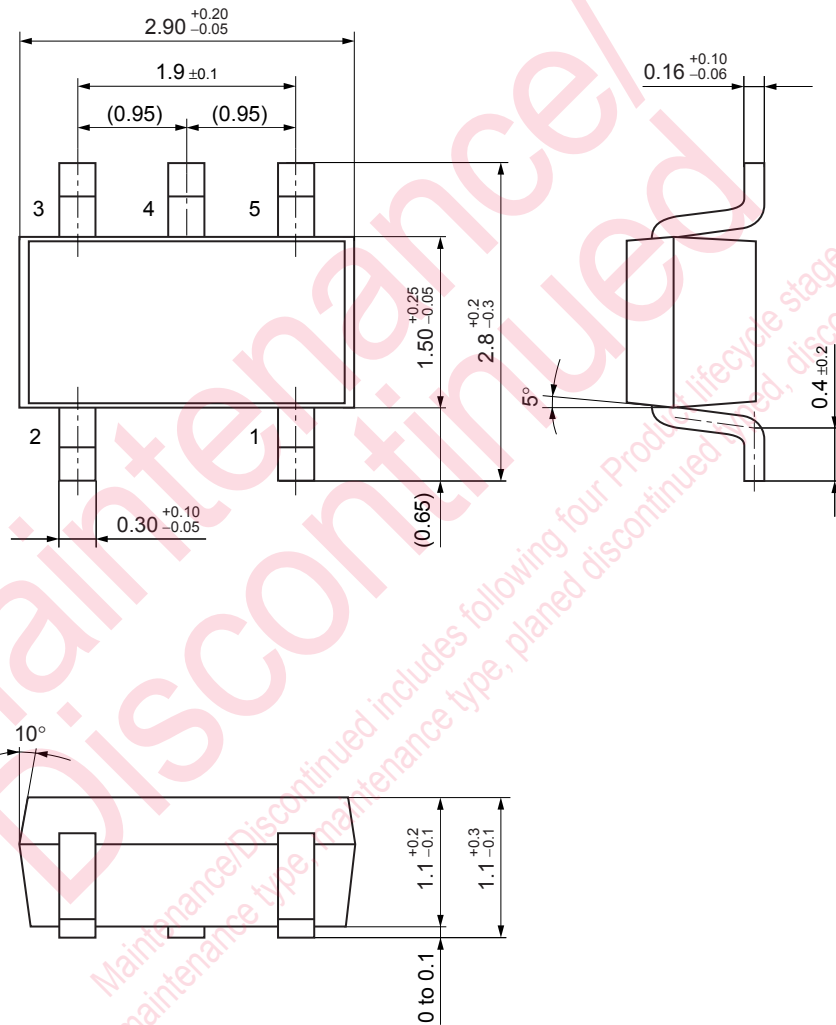
• SBD

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	$V_F$	$I_F = 700 \text{ mA}$			0.45	V
Reverse current	$I_R$	$V_R = 20 \text{ V}$			200	$\mu\text{A}$
Terminal capacitance	$C_t$	$V_R = 0, f = 1 \text{ MHz}$		100		pF
Reverse recovery time	$t_{rr}$	$I_F = I_R = 100 \text{ mA}, I_{rr} = 10 \text{ mA}, R_L = 100 \Omega$			7	ns

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

Mini5-G1

Unit: mm



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