Ordering number : ENA1006B

SCH2825

N-Channel Power MOSFET

30V, 1.6A, 180mΩ, Single SCH6 with Schottky Diode

ON Semiconductor®

http://onsemi.com

Features

- Composite type with a N-channel sillicon MOSFET and a schottky barrier diode contained in one package facilitating high-density mounting
- [MOSFET] · Low ON-resistance · Ultrahigh-speed switching · 4V drive
- [SBD] · Short reverse recovery time · Low forward voltage

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain to Source Voltage	V_{DSS}		30	V
Gate to Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		1.6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	6.4	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm²×0.8mm) 1unit	0.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V_{RRM}		30	V
Nonrepetitive Peak Reverse Surge Voltage	V_{RSM}		30	V
Average Output Current	I_O		0.5	A
Surge Forward Current	I_{FSM}	50Hz sine wave, 1 cycle	3	A
Junction Temperature	Tj		−55 to +125	°C
Storage Temperature	Tstg		−55 to +125	°C

This product is designed to “ESD immunity < 200V*”, so please take care when handling.

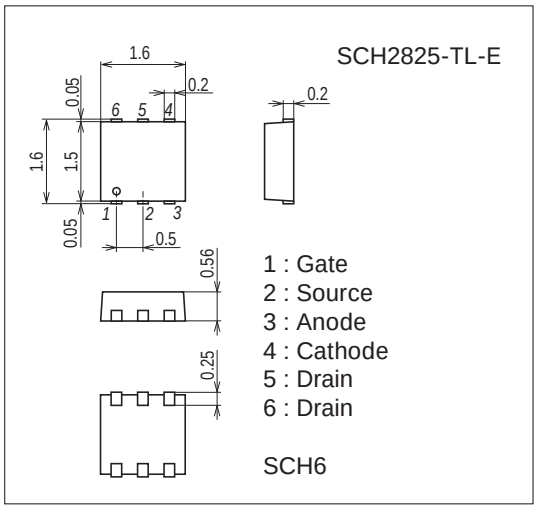
* Machine Model

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

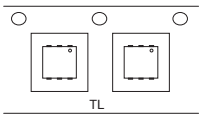
7028-003



Product & Package Information

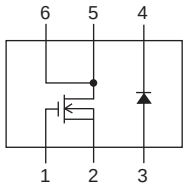
- Package : SCH6
- JEITA, JEDEC : SOT-563
- Minimum Packing Quantity : 5,000 pcs./reel

Packing Type : TL



Marking

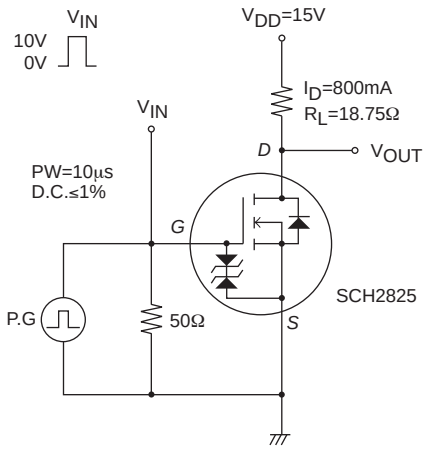
Electrical Connection



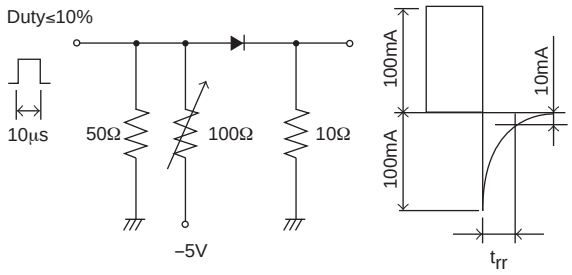
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	1.2		2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=800mA	0.6	1.0		S
Static Drain to Source On-State Resistance	R_{DS}(on)1	I_D=800mA, V_{GS}=10V		135	180	mΩ
	R_{DS}(on)2	I_D=400mA, V_{GS}=4V		230	330	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		88		pF
Output Capacitance	Coss			19		pF
Reverse Transfer Capacitance	Crss			11		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		3.4		ns
Rise Time	t_r			3.5		ns
Turn-OFF Delay Time	t_d(off)			10.6		ns
Fall Time	t_f			4.0		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=10V, I_D=1.6A		2.0		nC
Gate to Source Charge	Qgs			0.33		nC
Gate to Drain “Miller” Charge	Qgd			0.29		nC
Diode Forward Voltage	V_{SD}	I_S=1.6A, V_{GS}=0V		0.82	1.2	V
[SBD]						
Reverse Voltage	V_R	I_R=0.5mA	30			V
Forward Voltage	V_F	I_F=0.5A		0.42	0.48	V
Reverse Current	I_R	V_R=15V			120	μA
Interterminal Capacitance	C	V_R=10V, f=1MHz		13		pF
Reverse Recovery Time	t_{rr}	I_F=I_R=100mA, See specified Test Circuit.			10	ns

Switching Time Test Circuit
(MOSFET)

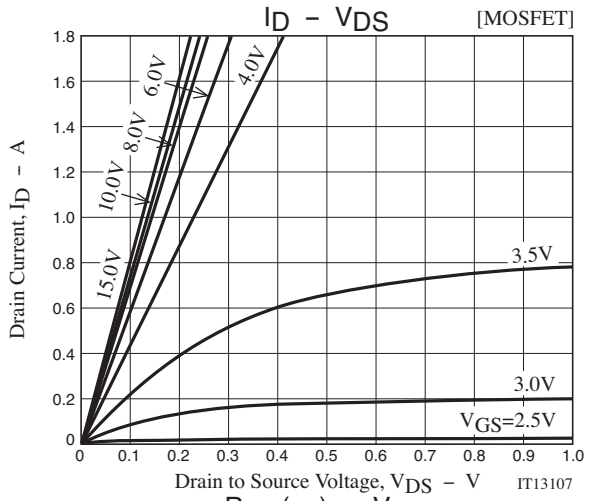


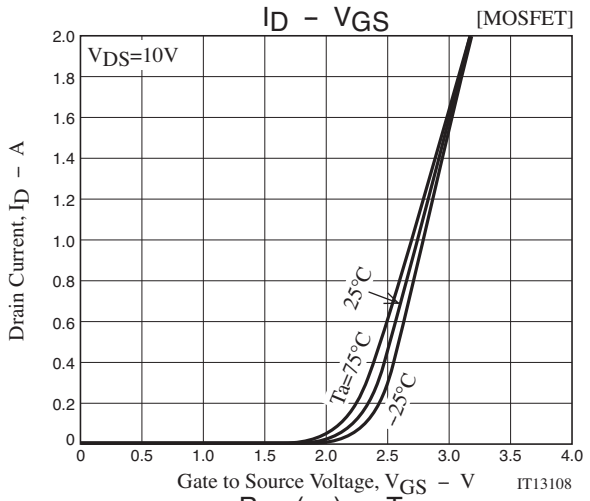
t_{rr} Test Circuit
(SBD)

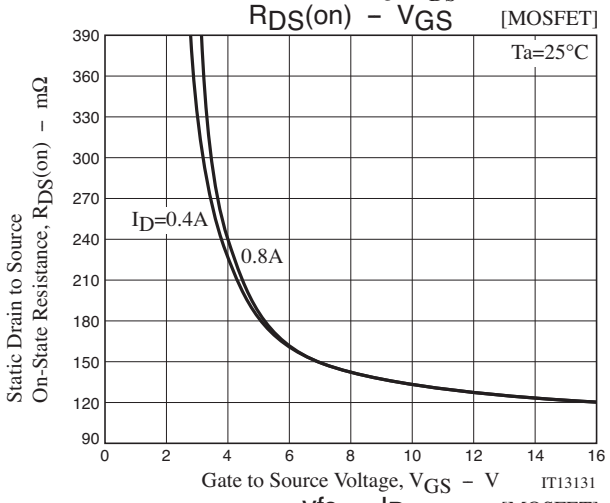


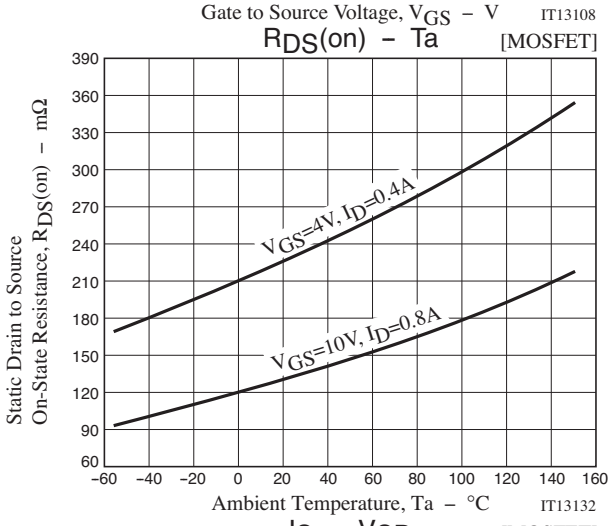
Ordering Information

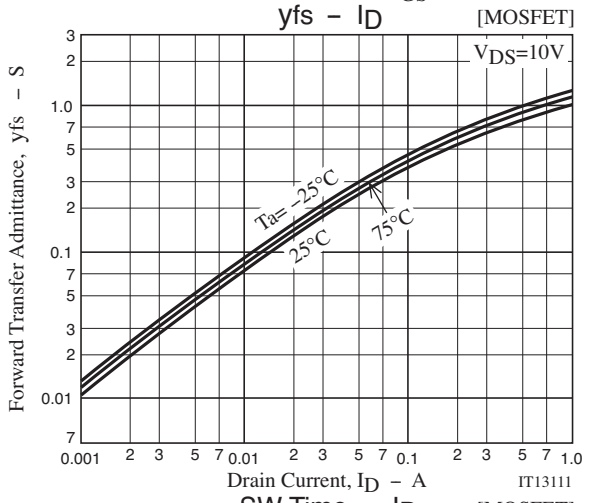
Device	Package	Shipping	memo
SCH2825-TL-E	SCH6	5,000pcs./reel	Pb Free

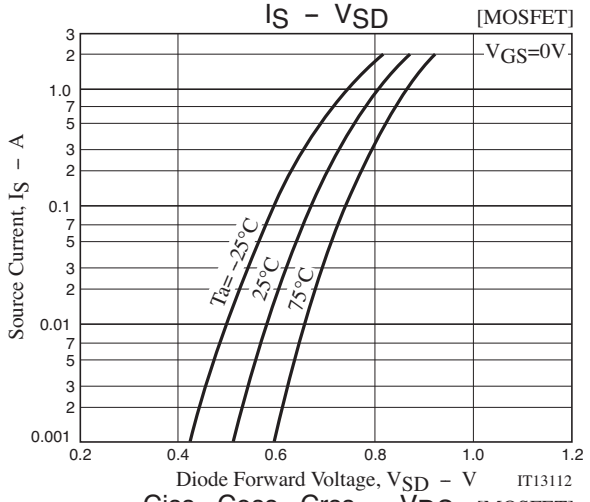


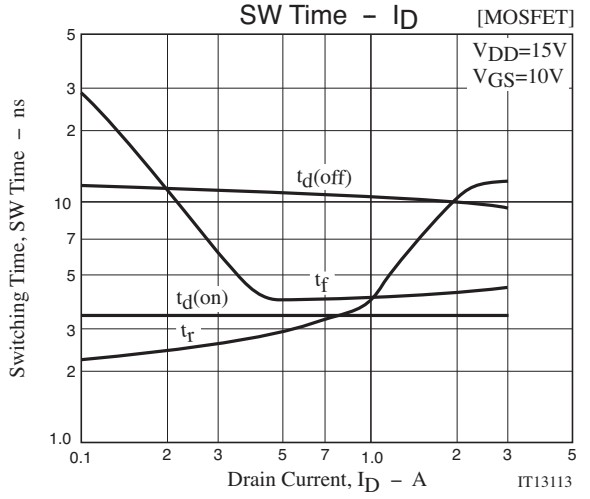


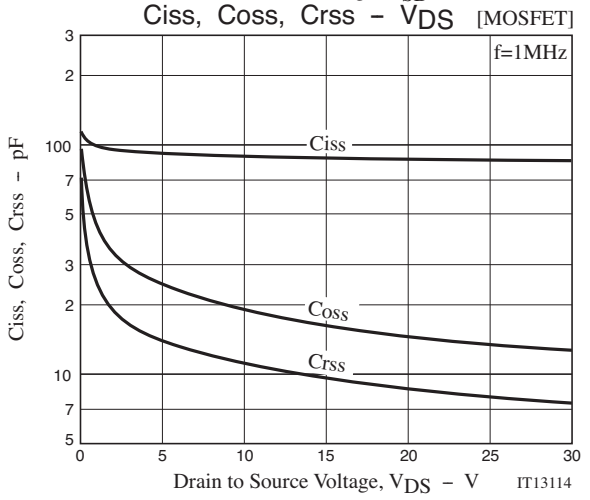


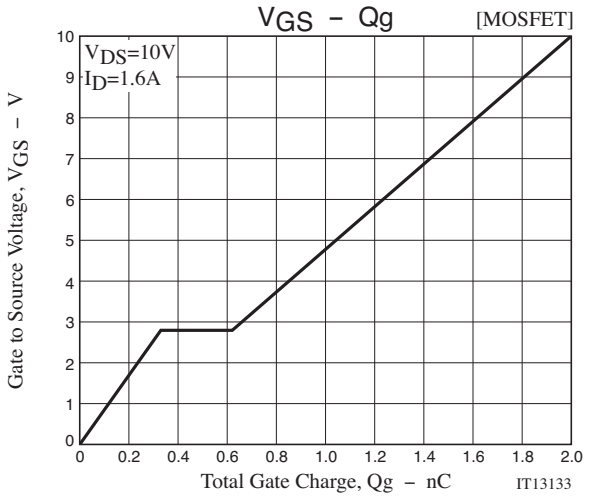


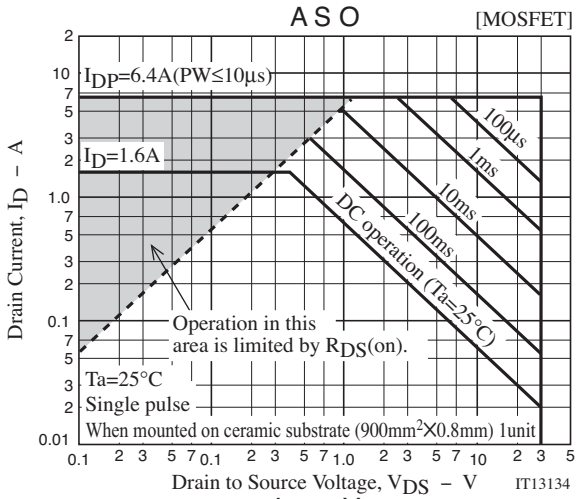


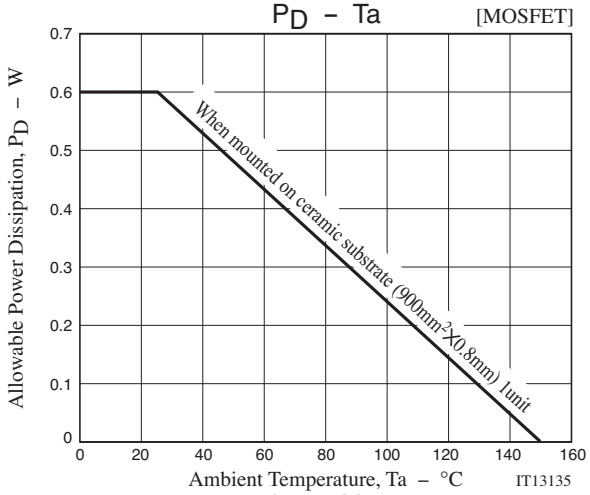


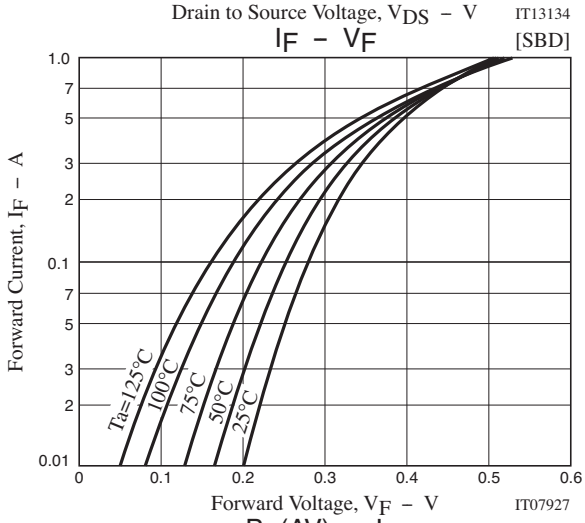


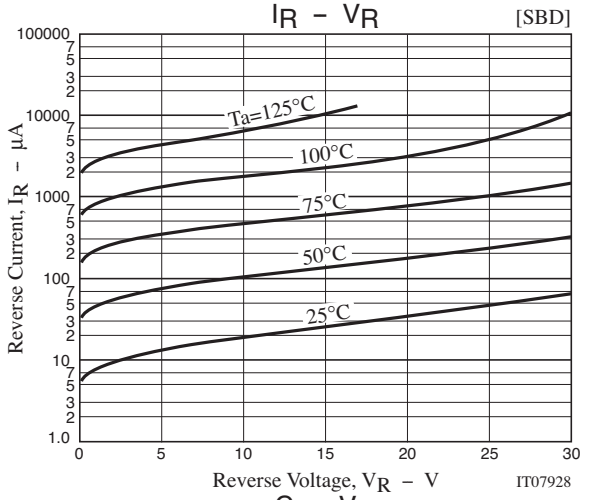


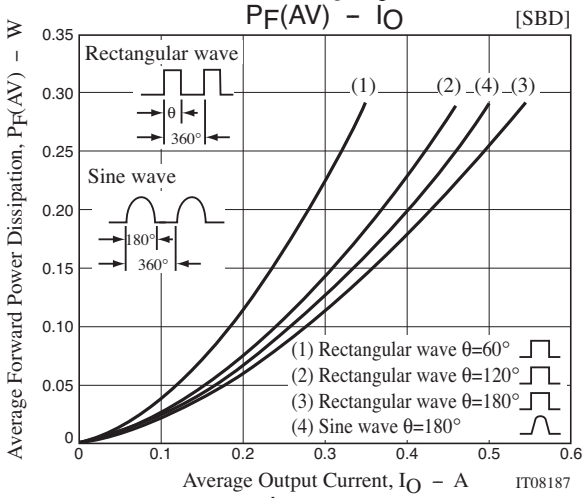


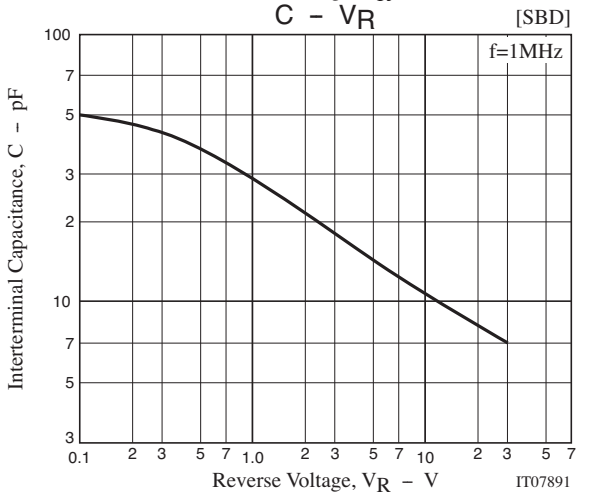


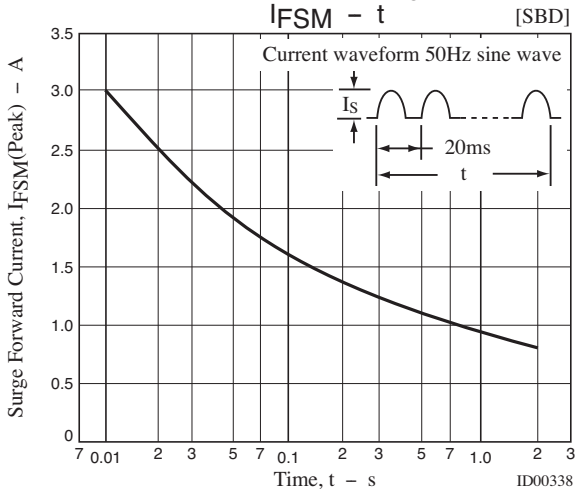






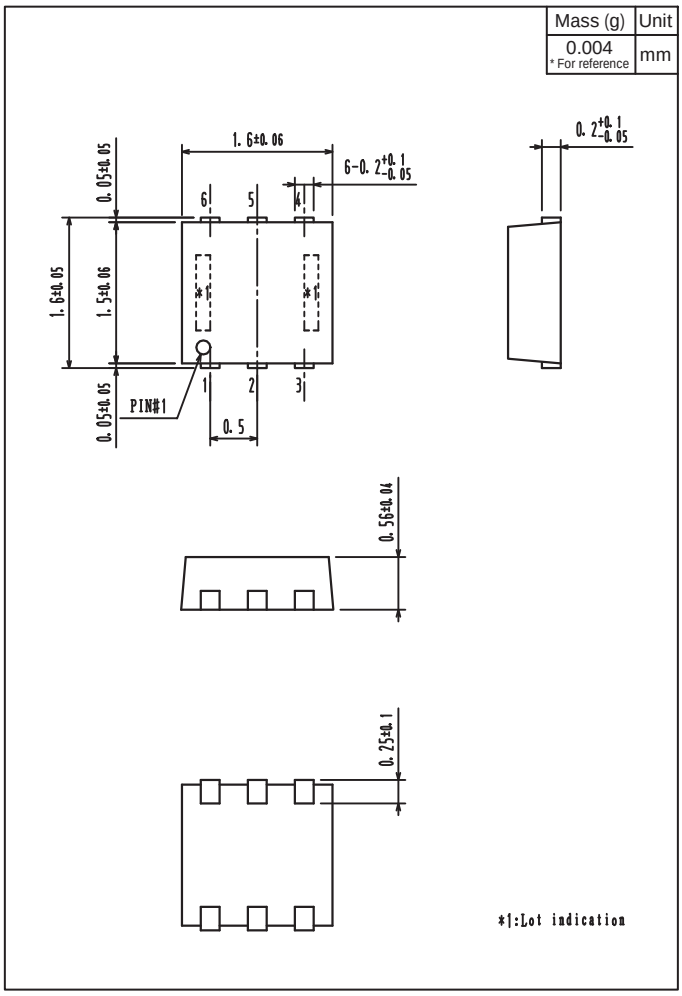




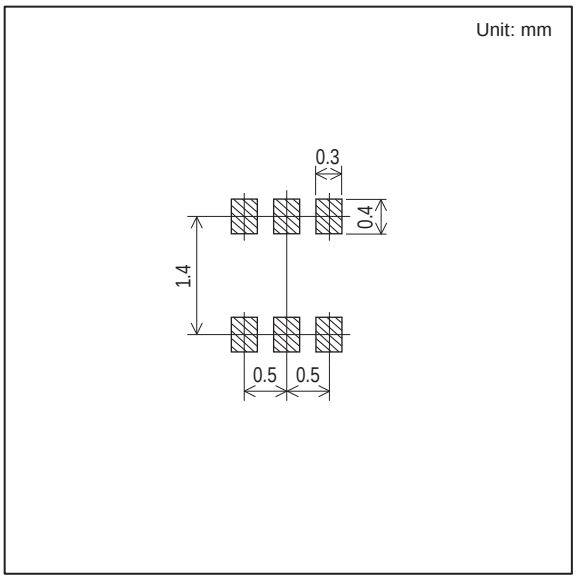


Outline Drawing

SCH2825-TL-E



Land Pattern Example



Note on usage : Since the SCH2825 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.