



SCH2825

N-Channel Power MOSFET 30V, 1.6A, 180mΩ, Single SCH6 with Schottky Diode

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Features

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

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 (900mm ² ×0.8mm) 1unit	0.6	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _{RRM}		30	V
Nonrepetitive Peak Reverse Surge Voltage	V _{RRSM}		30	V
Average Output Current	I _O		0.5	A
Surge Forward Current	I _{FSM}	50Hz sine wave, 1 cycle	3	A
Junction Temperature	T _j		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

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

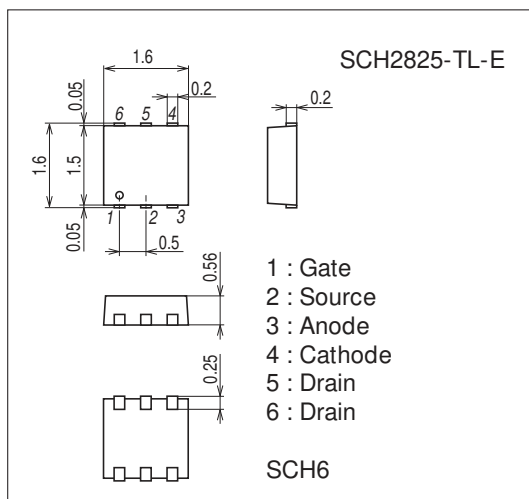
* Machine Model

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)

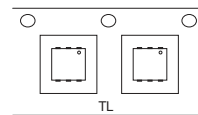
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Product & Package Information

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

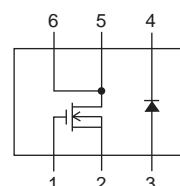
Packing Type : TL



Marking



Electrical Connection

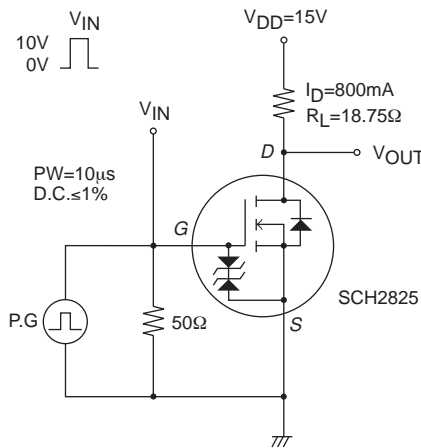


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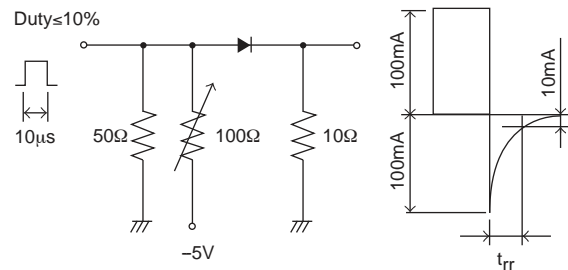
Electrical Characteristics at Ta=25°C

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}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=800mA$	0.6	1.0		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D=800mA, V_{GS}=10V$		135	180	$m\Omega$
	$R_{DS(on)2}$	$I_D=400mA, V_{GS}=4V$		230	330	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		88		pF
Output Capacitance	C_{oss}			19		pF
Reverse Transfer Capacitance	C_{rss}			11		pF
Turn-ON Delay Time	$t_d(on)$		See specified Test Circuit.		3.4	
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	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=1.6A$			2.0	
Gate to Source Charge	Q_{gs}			0.33		nC
Gate to Drain "Miller" Charge	Q_{gd}			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)

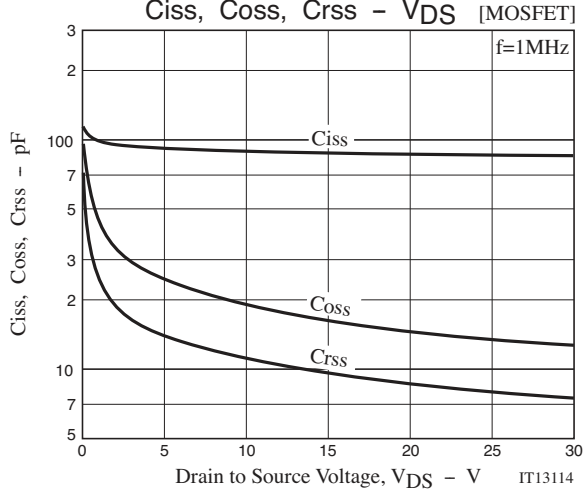
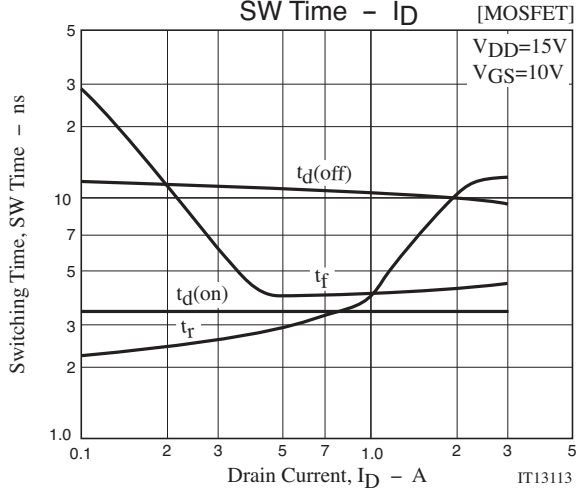
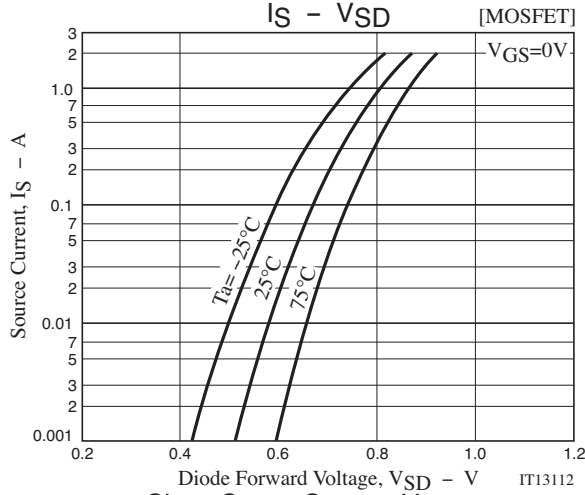
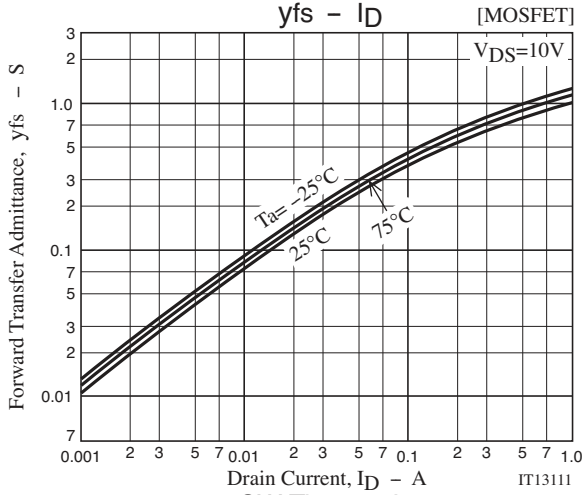
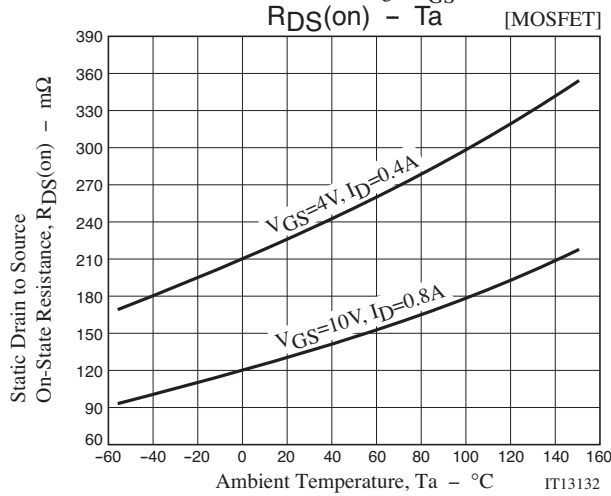
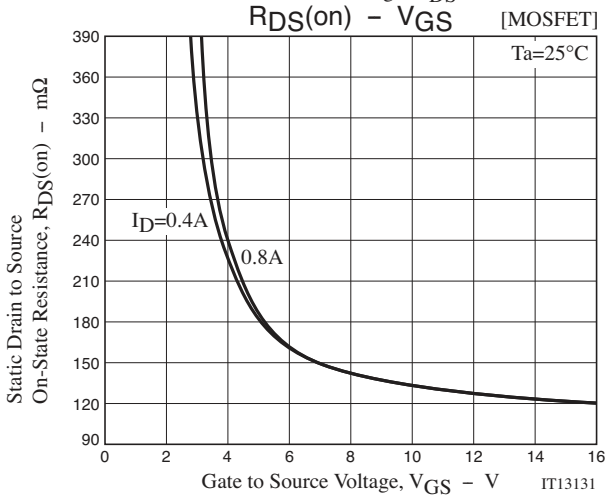
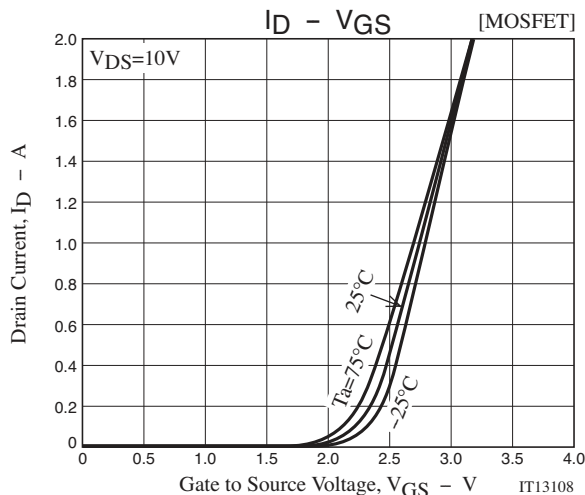
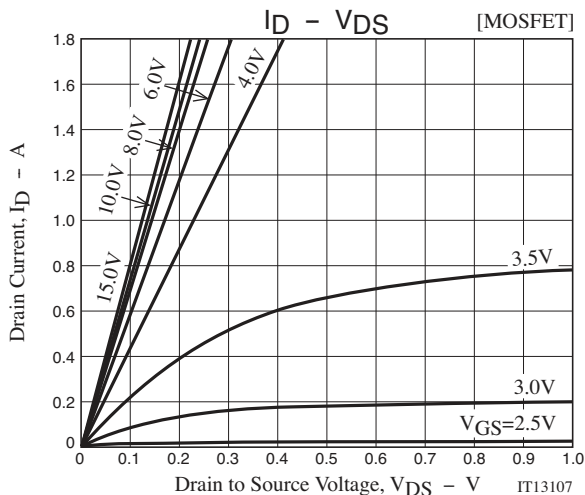


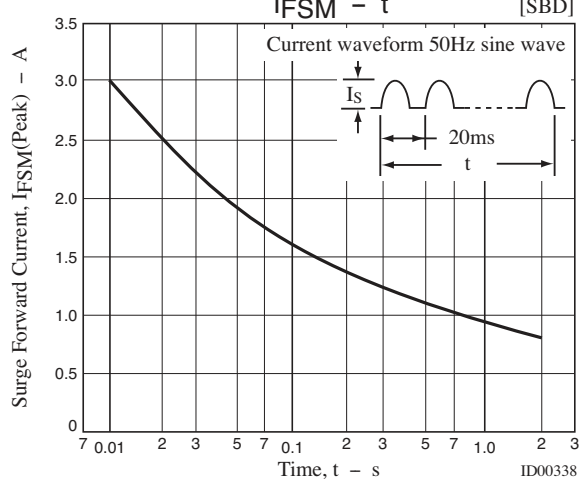
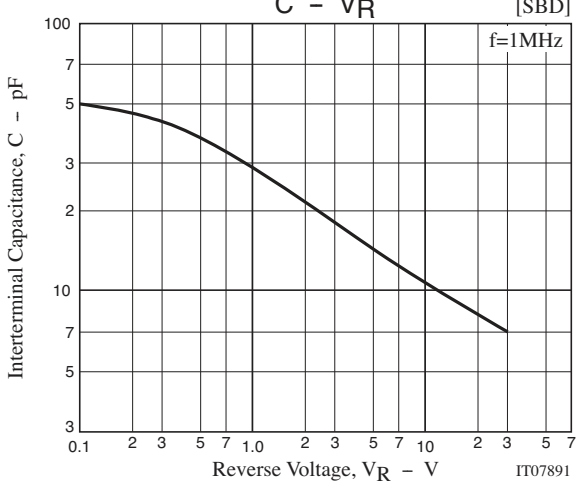
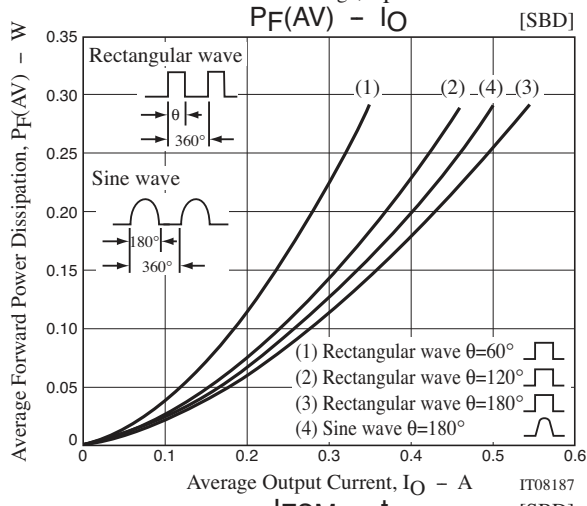
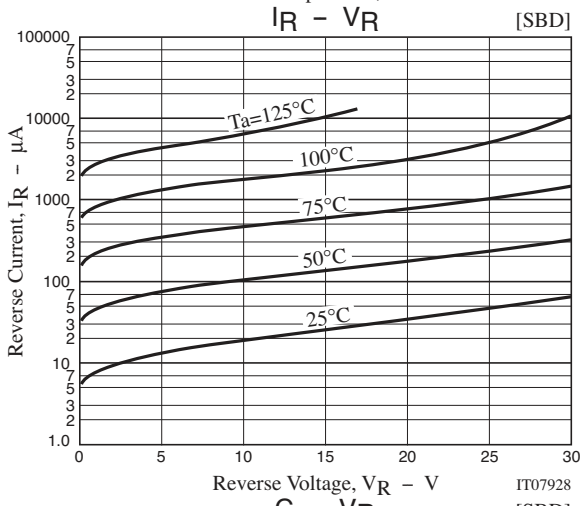
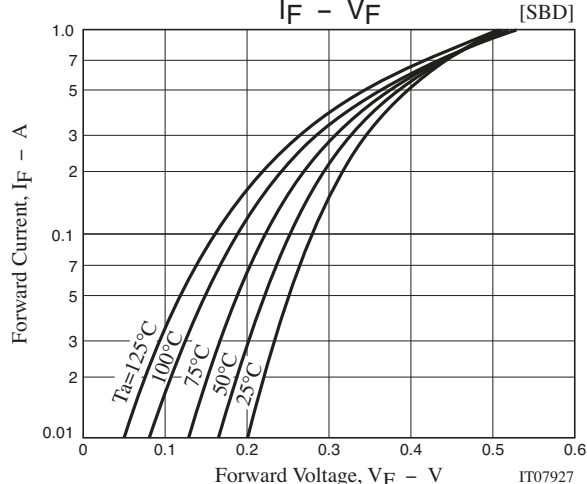
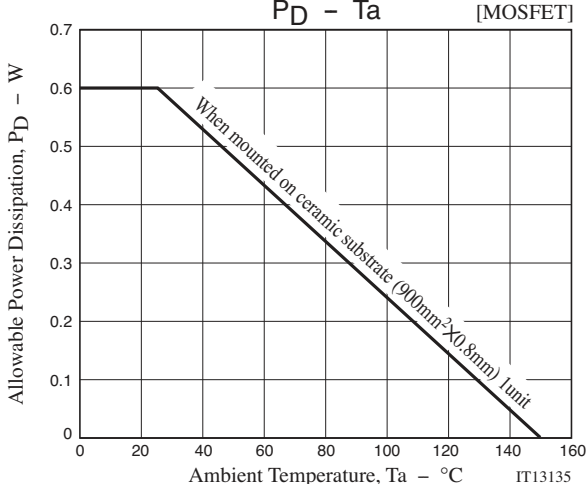
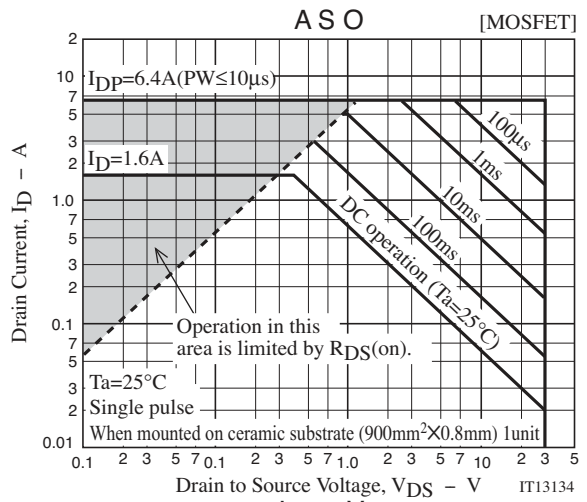
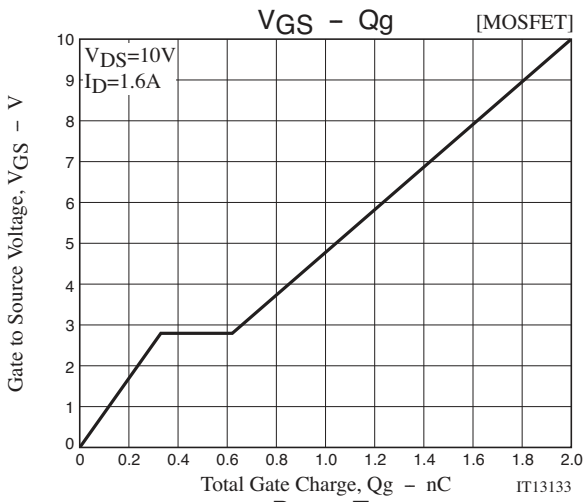
t_{rr} Test Circuit (SBD)



Ordering Information

Device	Package	Shipping	memo
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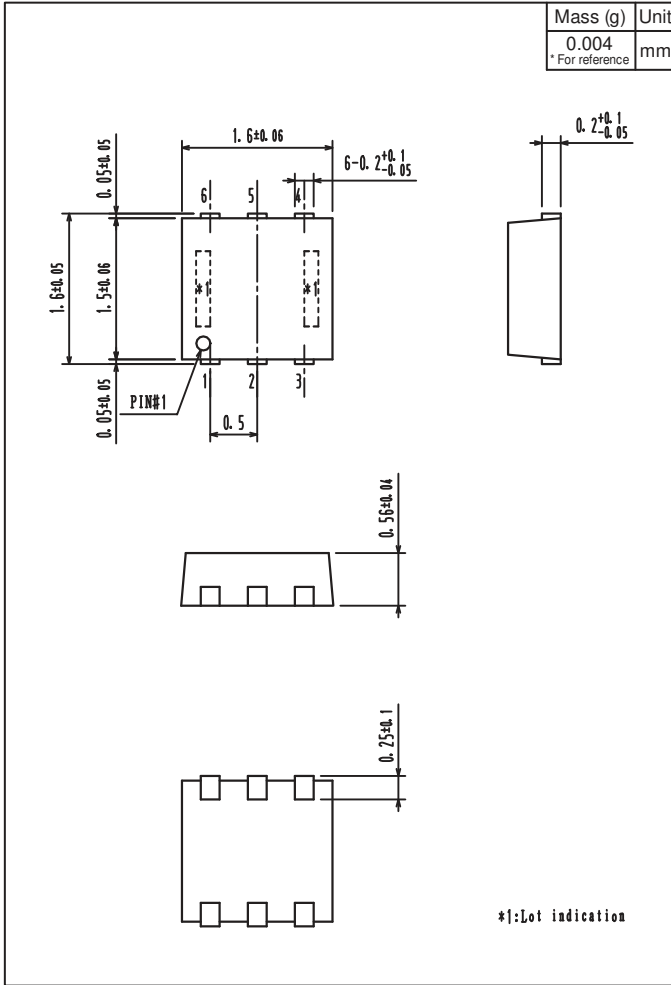




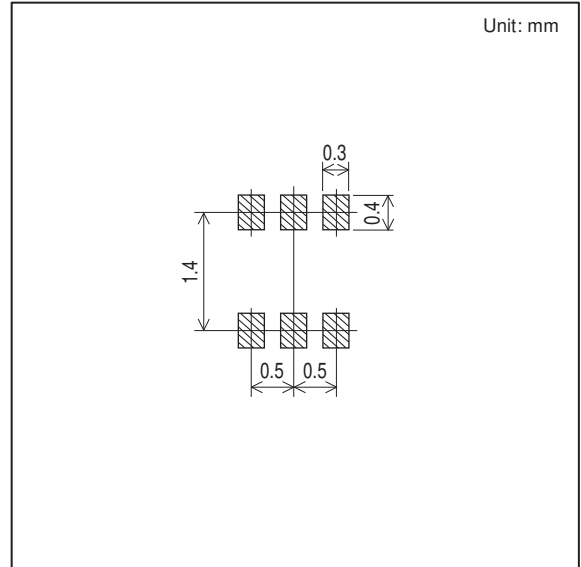
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Outline Drawing

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.

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