



SCH2825

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

ON Semiconductor®

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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
- 4V drive
- 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 (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 _{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	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.

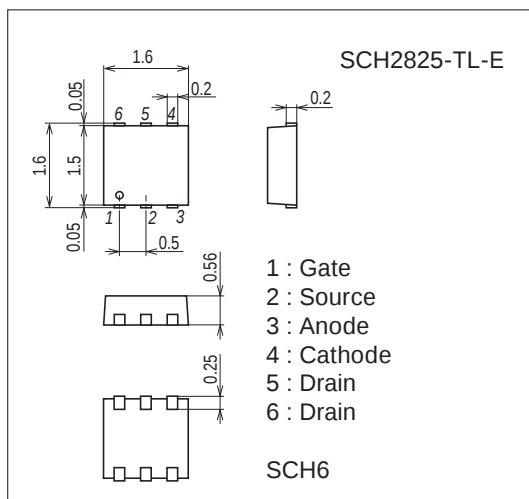
* Machine Model

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)

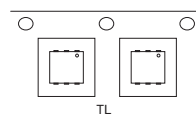
7028-003



Product & Package Information

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

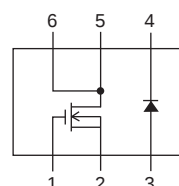
Packing Type : TL



Marking



Electrical Connection

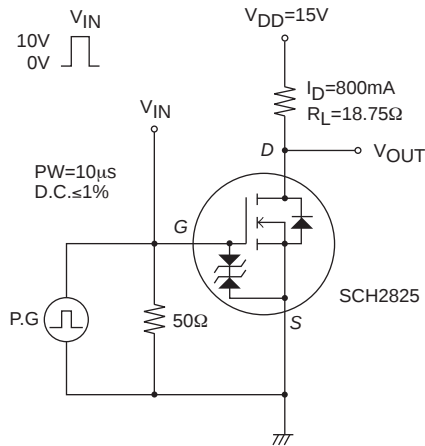


SCH2825

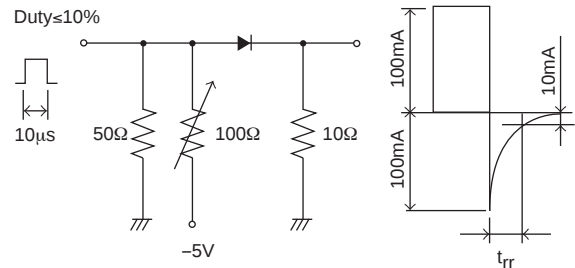
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain to Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V			1	μA
Gate to Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=800mA	0.6	1.0		S
Static Drain to Source On-State Resistance	RDS(on)1	ID=800mA, VGS=10V		135	180	mΩ
	RDS(on)2	ID=400mA, VGS=4V		230	330	mΩ
Input Capacitance	Ciss	VDS=10V, f=1MHz		88		pF
Output Capacitance	Coss			19		pF
Reverse Transfer Capacitance	Crss			11		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		3.4		ns
Rise Time	tr			3.5		ns
Turn-OFF Delay Time	td(off)			10.6		ns
Fall Time	tf			4.0		ns
Total Gate Charge	Qg	VDS=10V, VGS=10V, ID=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	VSD	IS=1.6A, VGS=0V		0.82	1.2	V
[SBD]						
Reverse Voltage	VR	IR=0.5mA	30			V
Forward Voltage	VF	IF=0.5A		0.42	0.48	V
Reverse Current	IR	VR=15V			120	μA
Interterminal Capacitance	C	VR=10V, f=1MHz		13		pF
Reverse Recovery Time	trr	IF=IR=100mA, See specified Test Circuit.			10	ns

Switching Time Test Circuit (MOSFET)

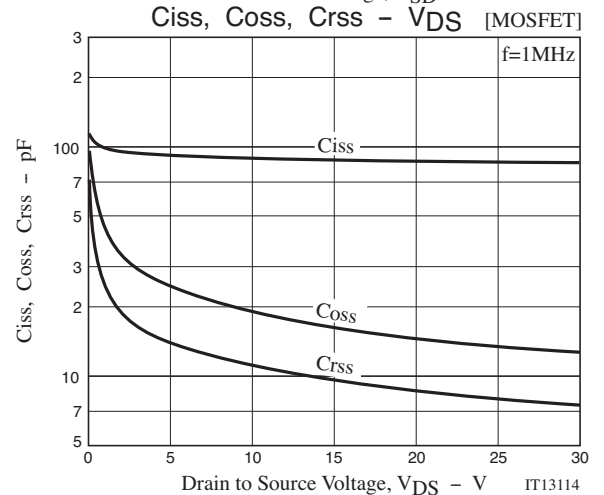
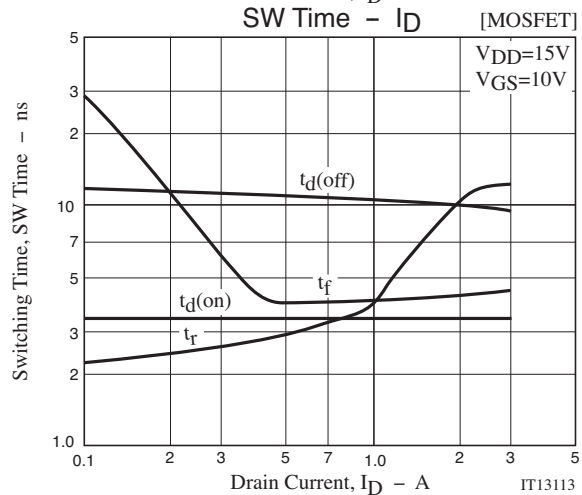
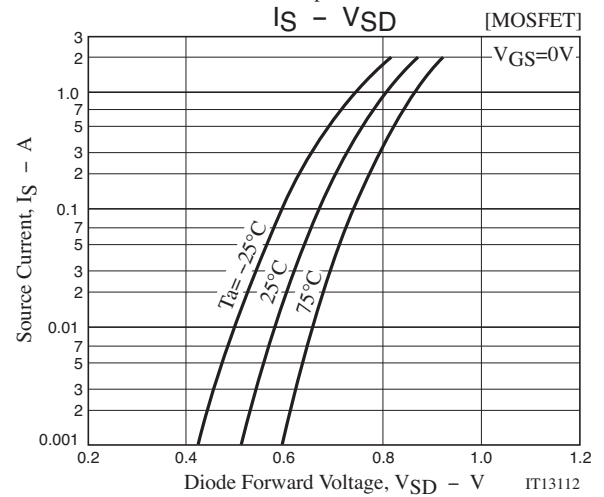
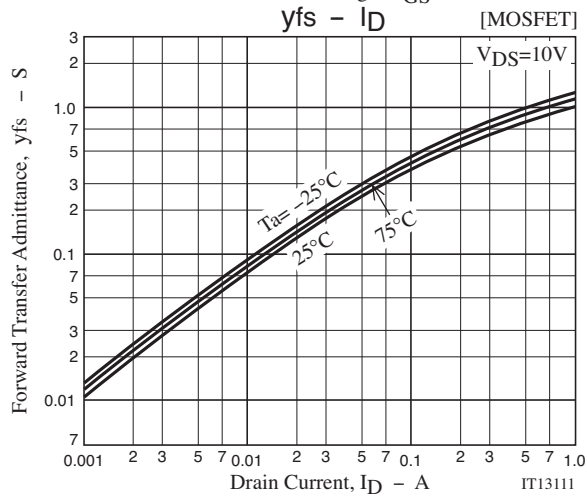
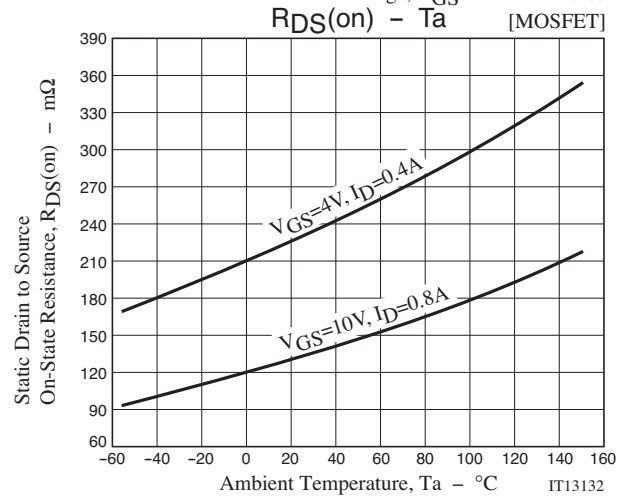
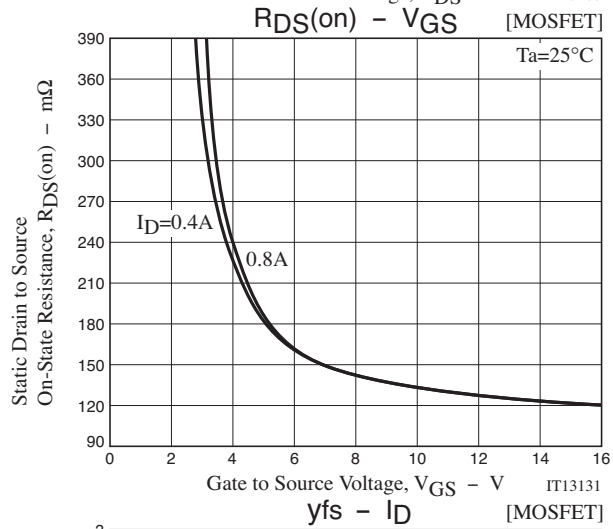
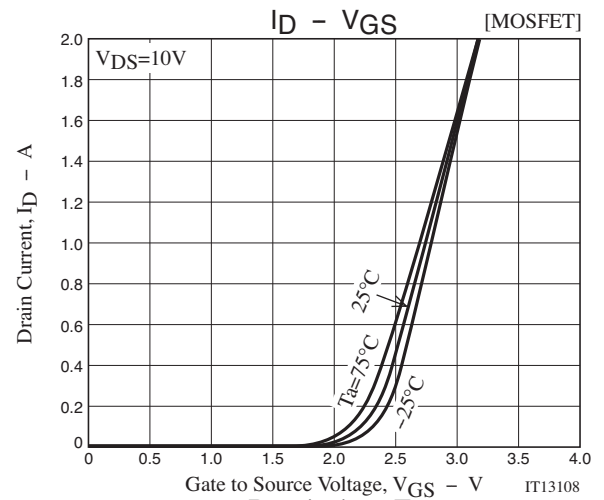
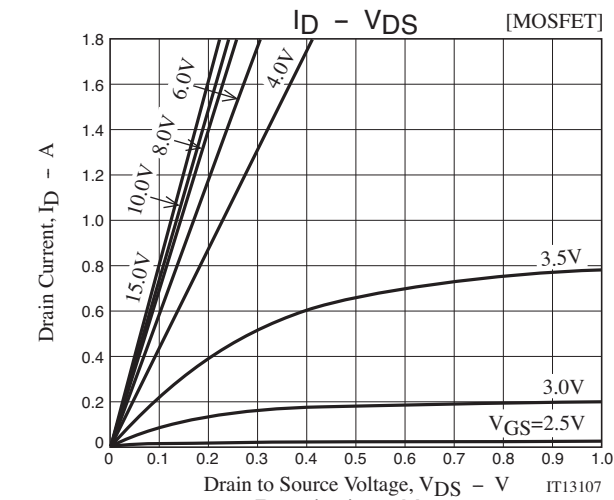


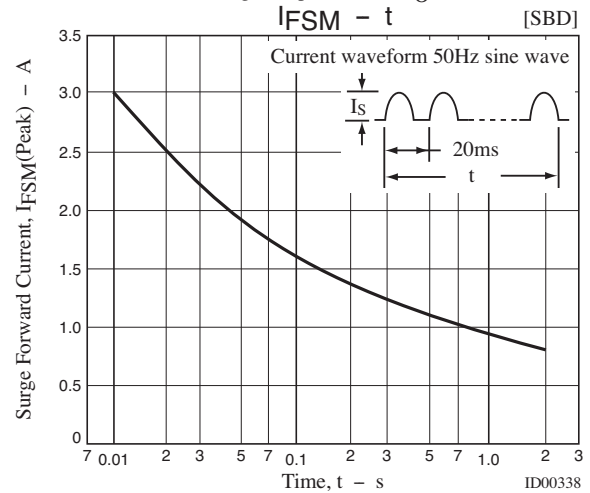
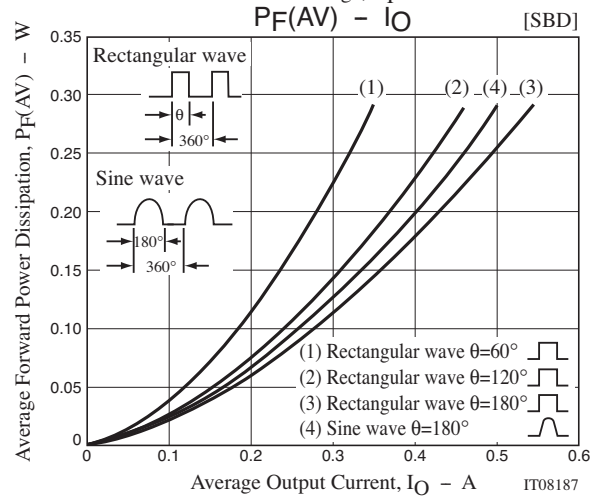
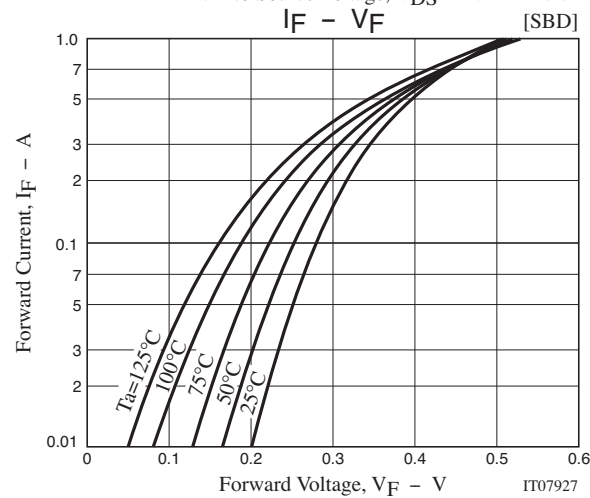
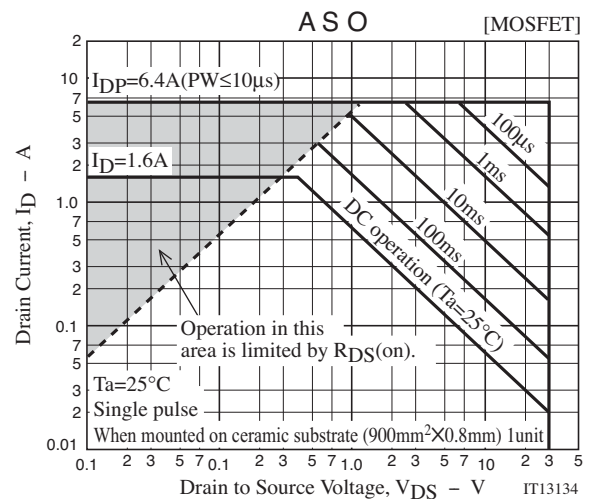
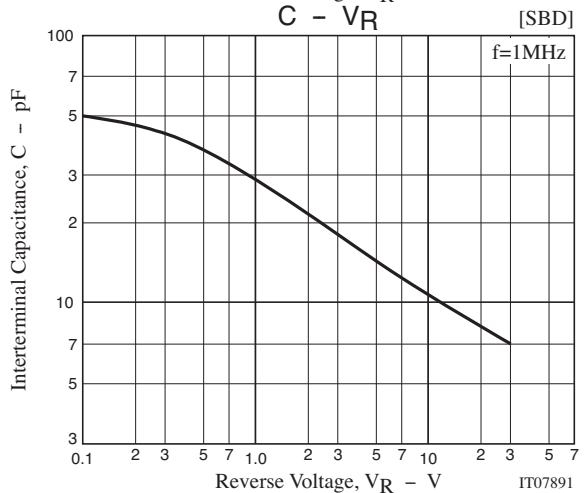
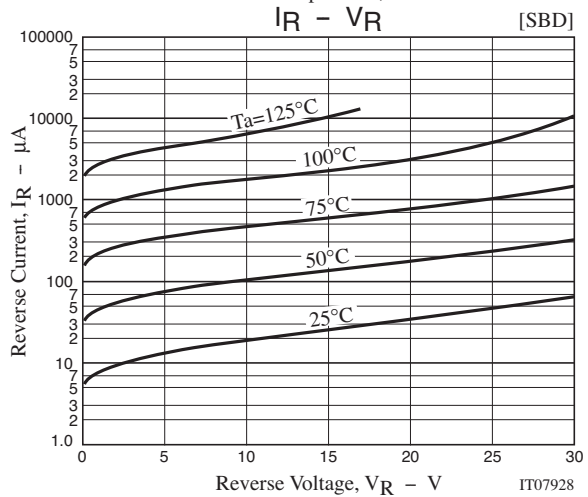
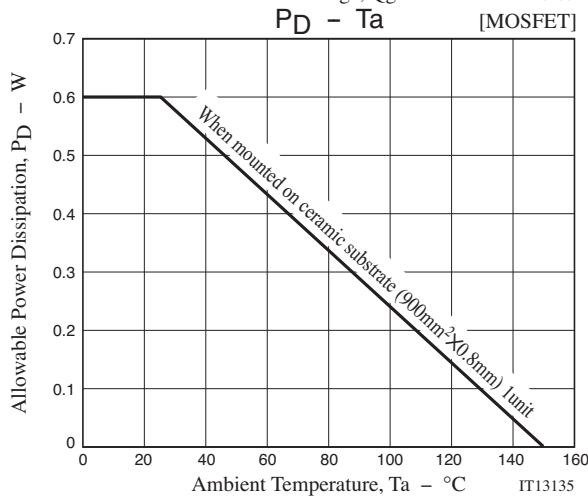
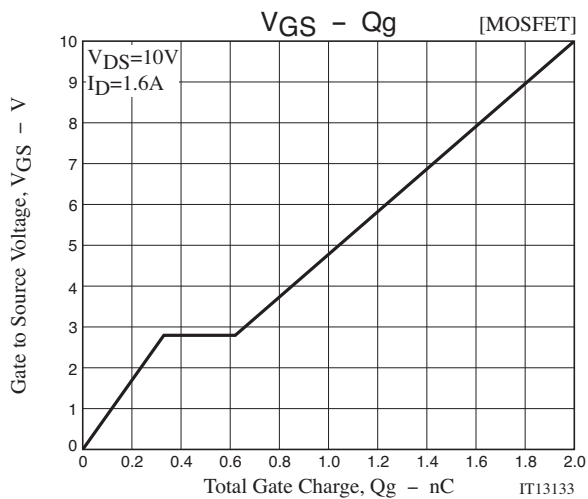
t_{rr} Test Circuit (SBD)



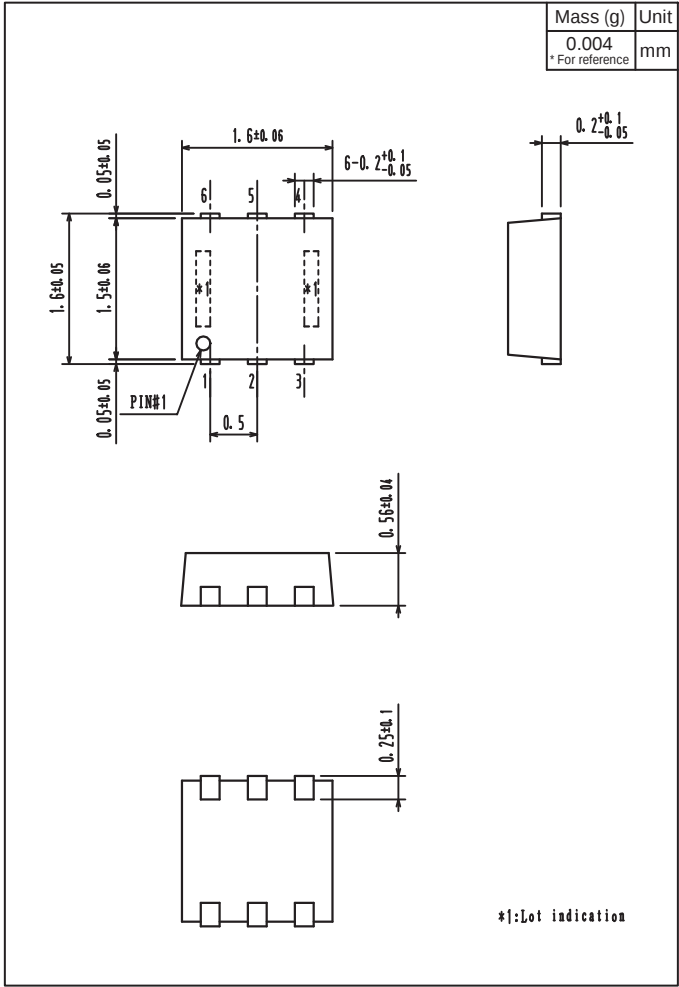
Ordering Information

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

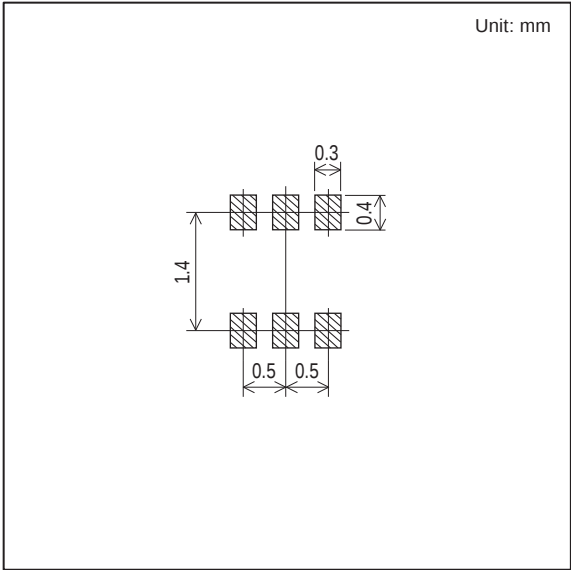




Outline Drawing
SCH2825-TL-E



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.

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