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SCH1345

P-Channel Power MOSFET –20V, –4.5A, 49mΩ, Single SCH6

Features

- On-resistance $R_{DS(on)1}=42\text{m}\Omega$ (typ)
- Halogen free compliance
- –1.5V drive
- Protection diode in

Specifications

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

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	V_{DSS}		–20	V
Gate to Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		–4.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	–18	A
Power Dissipation	P_D	When mounted on ceramic substrate(900mm ² ×0.8mm)	1	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		–55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Electrical Characteristics at $T_a = 25^\circ\text{C}$

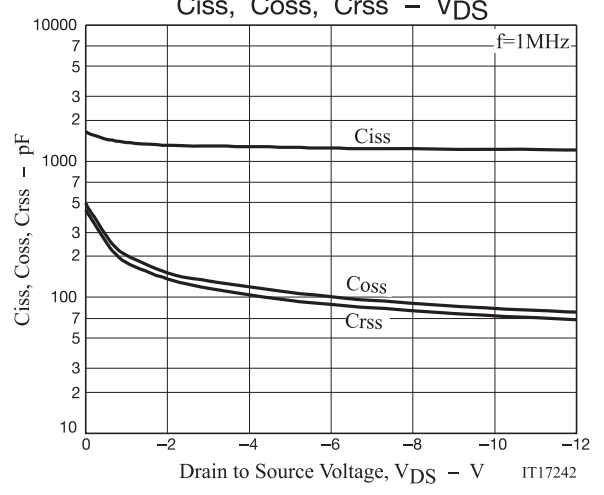
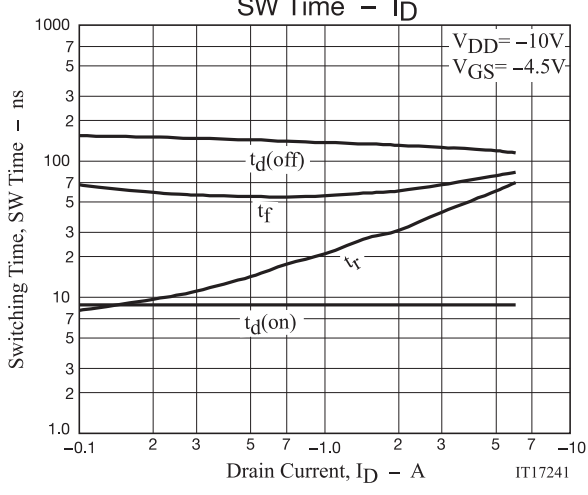
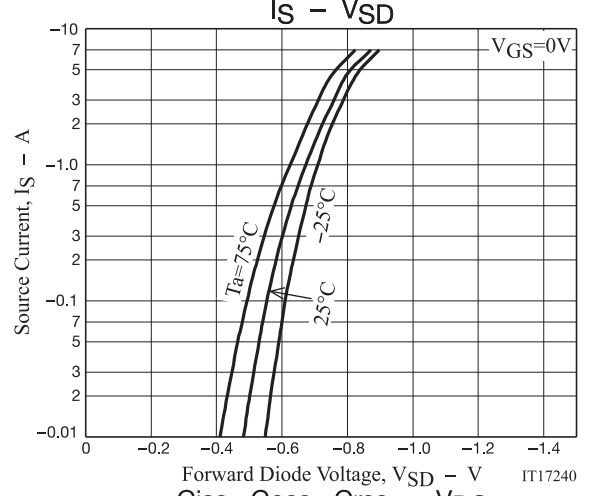
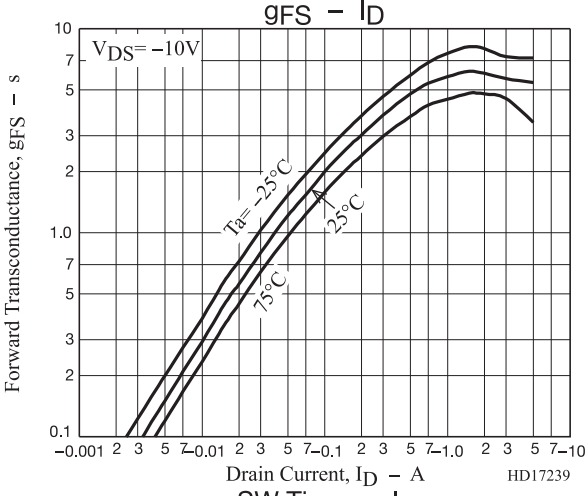
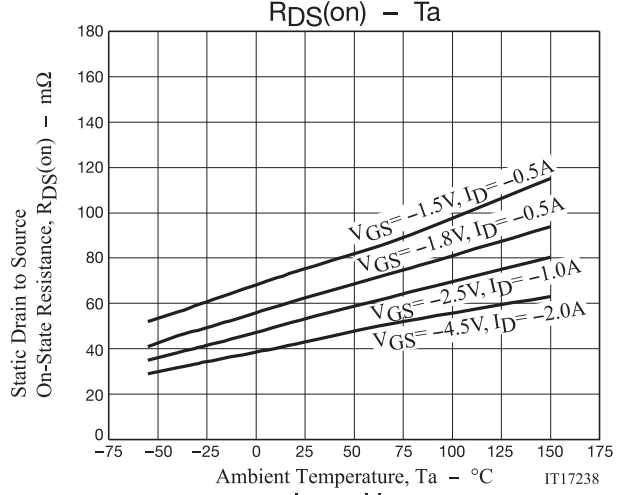
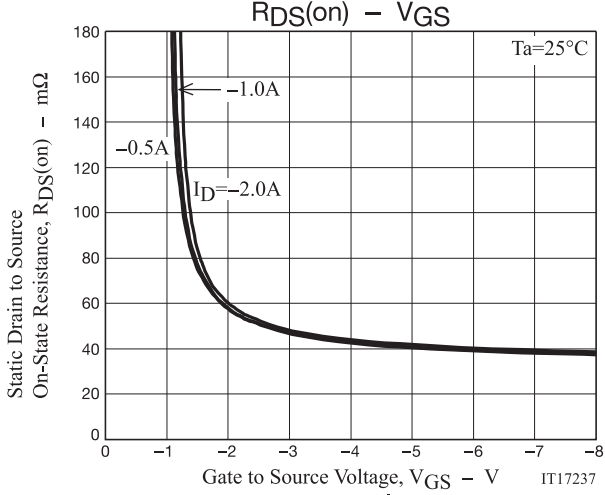
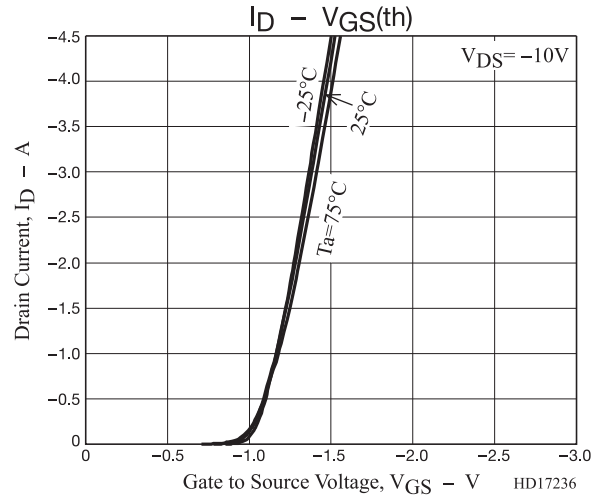
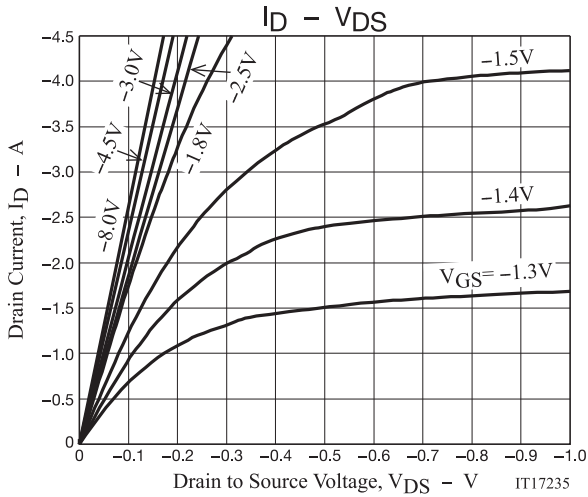
Parameter	Symbol	Conditions	Value			Unit	
			min	typ	max		
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0\text{V}$	–20			V	
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\text{V}$, $V_{GS} = 0\text{V}$			–1	μA	
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	–0.4		–1.3	V	
Forward Transconductance	g_{FS}	$V_{DS} = -10\text{V}$, $I_D = -2\text{A}$		6		S	
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D = -2\text{A}$, $V_{GS} = -4.5\text{V}$		42	49	$\text{m}\Omega$	
	$R_{DS(on)2}$	$I_D = -1\text{A}$, $V_{GS} = -2.5\text{V}$		53	64	$\text{m}\Omega$	
	$R_{DS(on)3}$	$I_D = -0.5\text{A}$, $V_{GS} = -1.8\text{V}$		65	85	$\text{m}\Omega$	
	$R_{DS(on)4}$	$I_D = -0.5\text{A}$, $V_{GS} = -1.5\text{V}$		74	120	$\text{m}\Omega$	
Input Capacitance	C_{iss}	$V_{DS} = -10\text{V}$, $f = 1\text{MHz}$ See specified Test Circuit.		1220		pF	
Output Capacitance	C_{oss}			82		pF	
Reverse Transfer Capacitance	C_{rss}			72		pF	
Turn-ON Delay Time	$t_{d(on)}$			8.8		ns	
Rise Time	t_r			35		ns	
Turn-OFF Delay Time	$t_{d(off)}$			123		ns	
Fall Time	t_f			61		ns	
Total Gate Charge	Q_g		$V_{DS} = -10\text{V}$, $V_{GS} = -4.5\text{V}$, $I_D = -4.5\text{A}$		11		nC
Gate to Source Charge	Q_{gs}				1.9		nC
Gate to Drain "Miller" Charge	Q_{gd}				1.9		nC
Forward Diode Voltage	V_{SD}	$I_S = -4.5\text{A}$, $V_{GS} = 0\text{V}$		–0.82		–1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

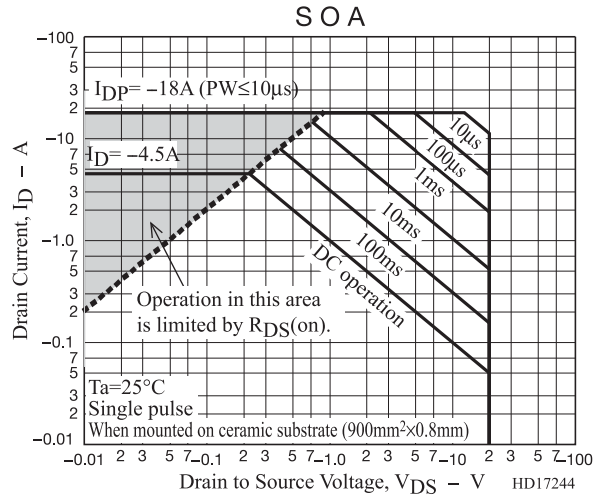
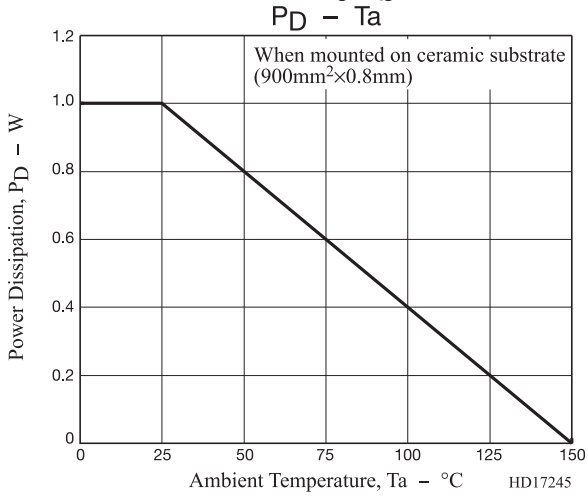
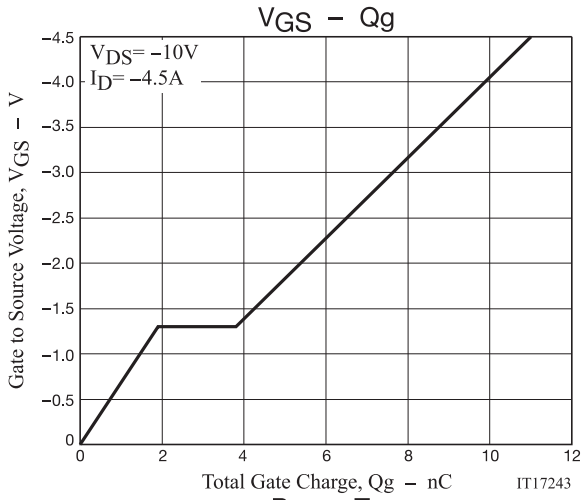
ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

SCH1345



SCH1345



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Package Dimensions

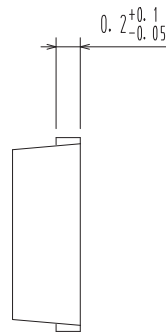
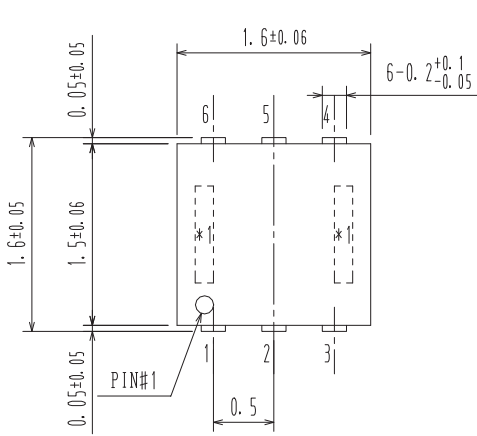
SCH1345-TL-H

unit : mm

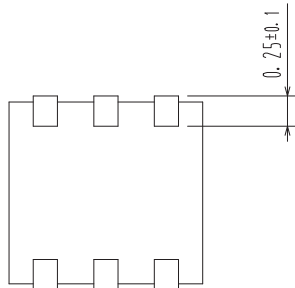
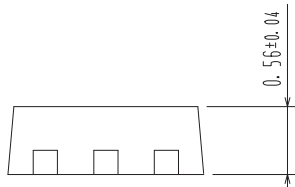
SOT-563 / SCH6

CASE 463AB

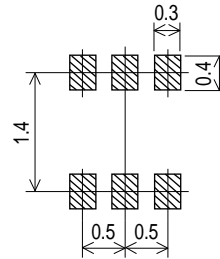
ISSUE 0



- 1 : Drain
- 2 : Drain
- 3 : Gate
- 4 : Source
- 5 : Drain
- 6 : Drain



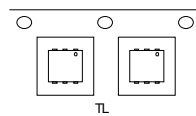
Recommended Soldering Footprint



Ordering & Package Information

Device	Package	Shipping	note
SCH1345-TL-H	SCH6 SOT-563	5,000 pcs. / reel	Pb-Free And Halogen Free

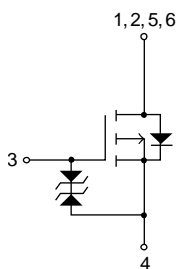
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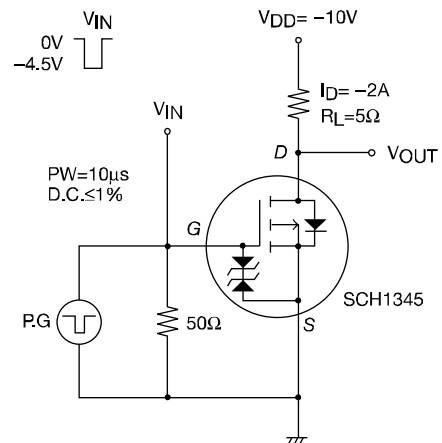
Marking



Electrical Connection



Switching Time Test Circuit



Note on usage : Since the SCH1345 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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