



ECH8695R

N-Channel Power MOSFET 24V, 11A, 9.1mΩ, Dual ECH8 Common Drain

ON Semiconductor®

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Features

- Low On-resistance
- 2.5V drive
- Common-drain type
- Protection diode in
- Built-in gate protection resistor
- Best suited for LiB charging and discharging switch
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	V _{DSS}		24	V
Gate to Source Voltage	V _{GSS}		±12.5	V
Drain Current (DC)	I _D		11	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	60	A
Power Dissipation	P _D	When mounted on ceramic substrate(900mm ² ×0.8mm) 1unit	1.4	W
Total Dissipation	P _T	When mounted on ceramic substrate(900mm ² ×0.8mm)	1.5	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.

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Ambient When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	R _{θJA}	89.3	°C /W

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0V	24			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate to Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =10V, I _D =1mA	0.5		1.3	V
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =5A		6.5		S
Static Drain to Source On-State Resistance	R _{DS(on)1}	I _D =5A, V _{GS} =4.5V	5.6	7.0	9.1	mΩ
	R _{DS(on)2}	I _D =5A, V _{GS} =4.0V	5.8	7.3	9.5	mΩ
	R _{DS(on)3}	I _D =5A, V _{GS} =3.1V	6.5	8.2	11.5	mΩ
	R _{DS(on)4}	I _D =2.5A, V _{GS} =2.5V	7.6	9.5	13.3	mΩ

Continued on next page.

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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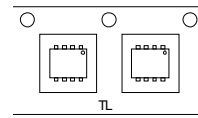
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		300		ns
Rise Time	t_r			320		ns
Turn-OFF Delay Time	$t_{d(off)}$			19700		ns
Fall Time	t_f			22300		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=11A$		10		nC
Gate to Source Charge	Q_{gs}			1.6		nC
Gate to Drain "Miller" Charge	Q_{gd}			1.5		nC
Forward Diode Voltage	V_{SD}	$I_S=11A, V_{GS}=0V$		0.77	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.

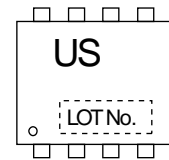
Ordering & Package Information

Device	Package	Shipping	note
ECH8695R-TL-W	ECH8	3,000 pcs. / reel	Pb-Free and Halogen Free

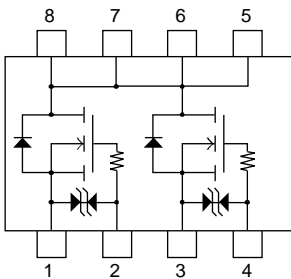
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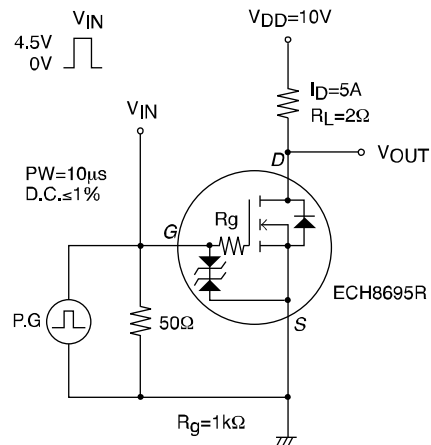
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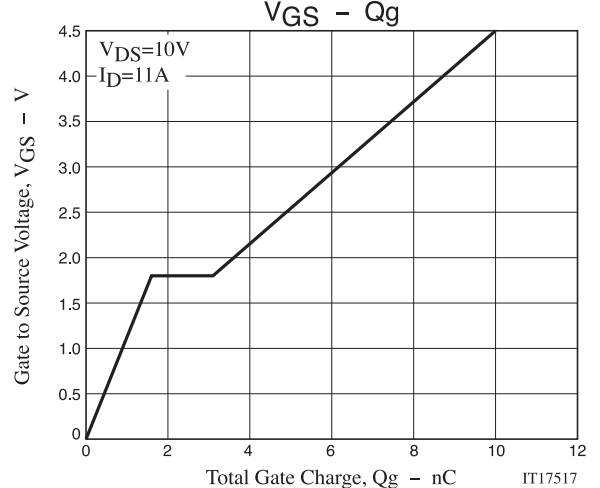
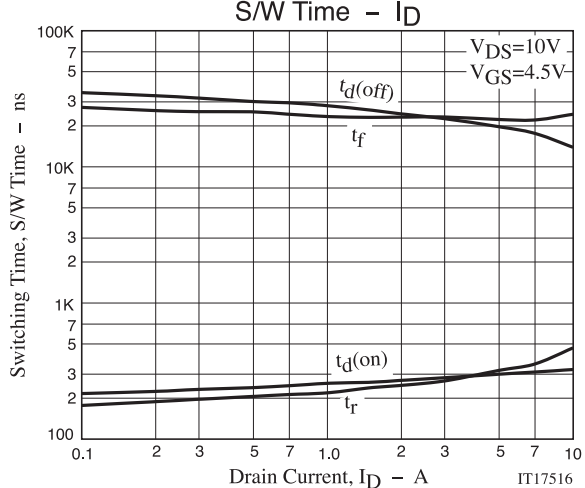
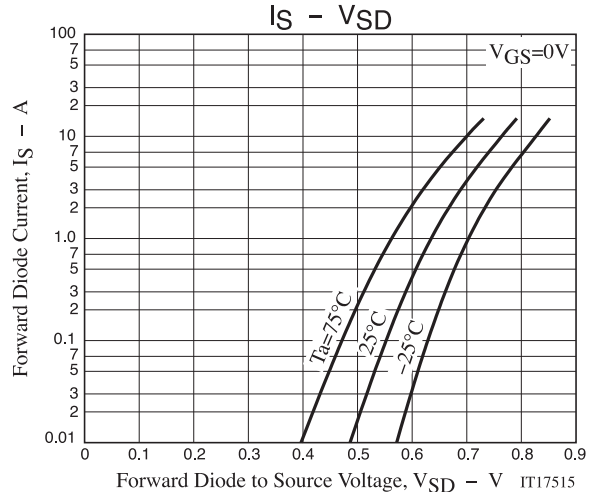
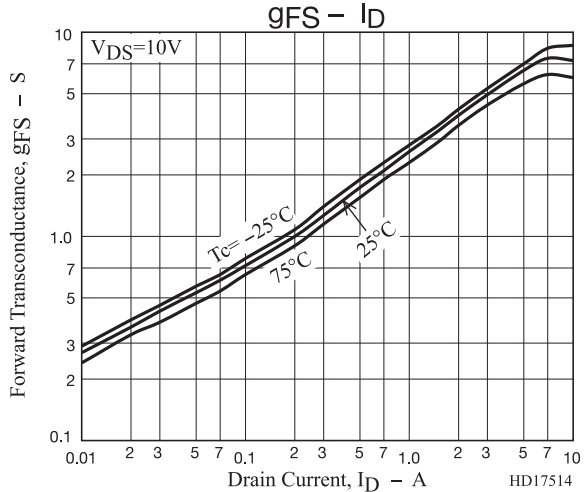
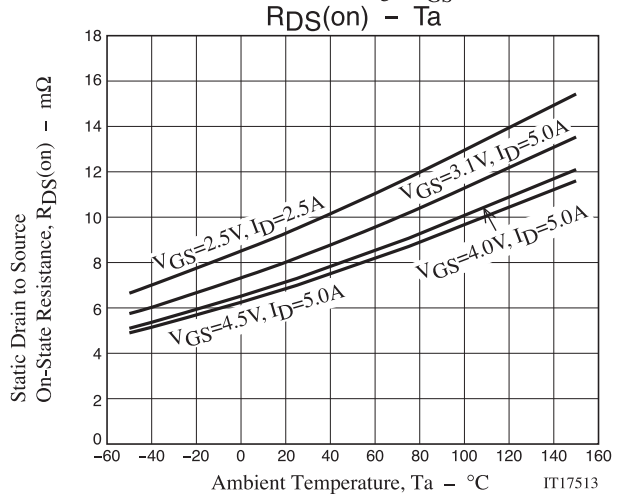
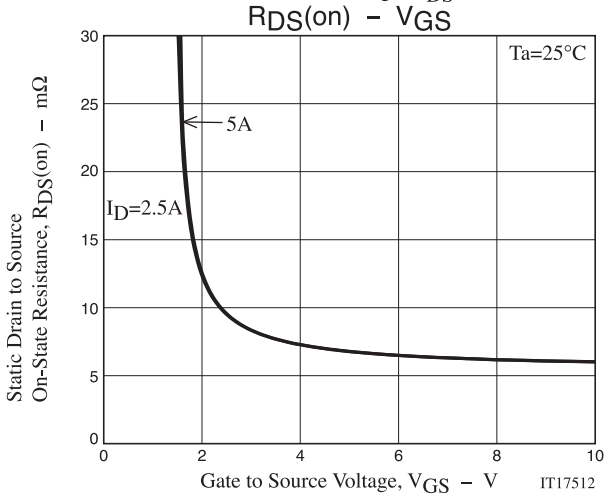
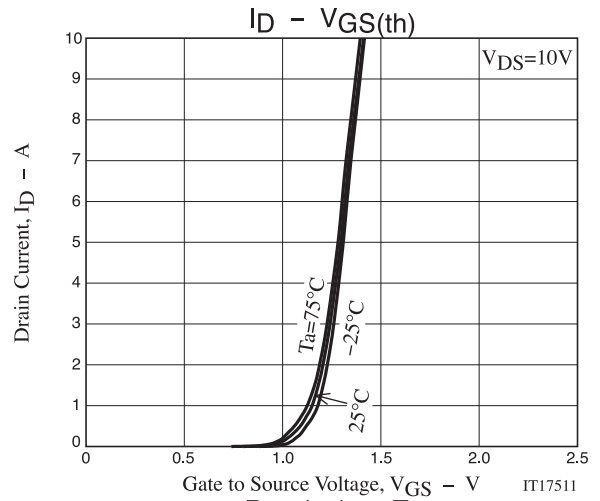
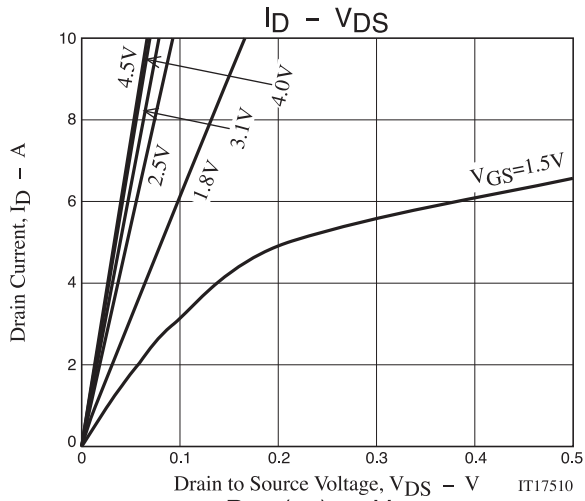
Electrical Connection



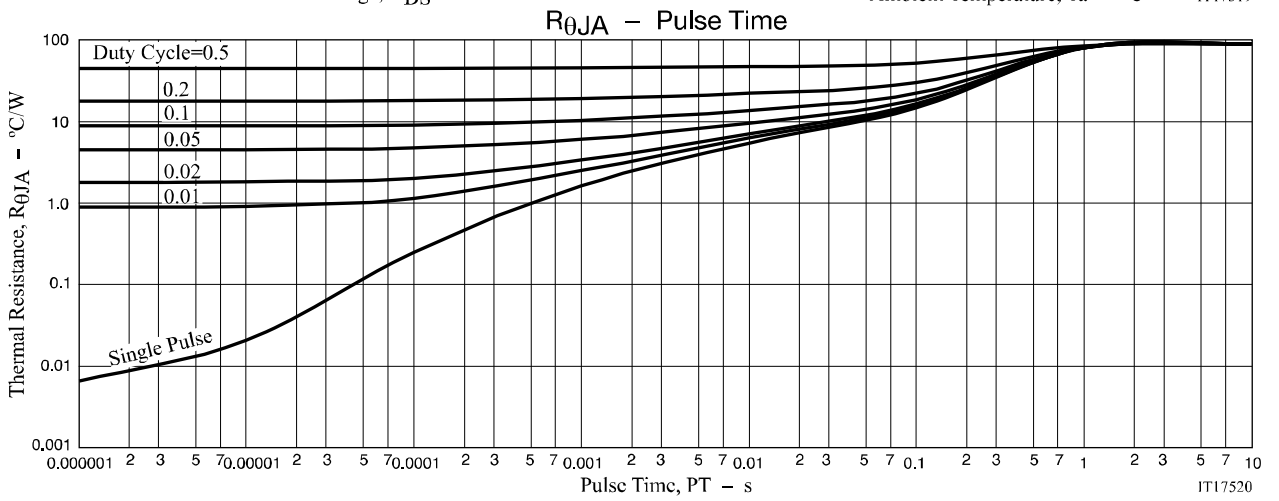
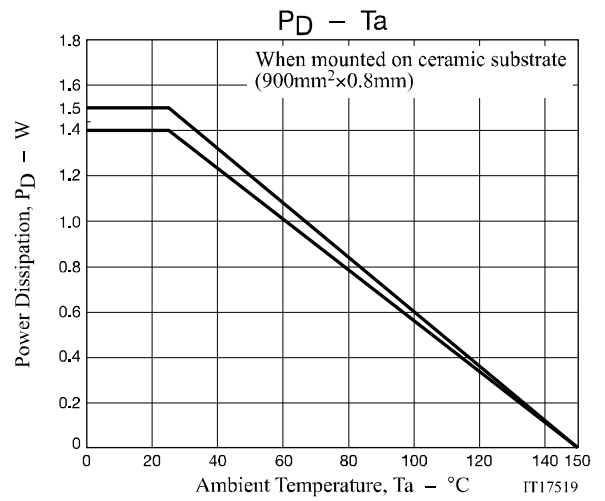
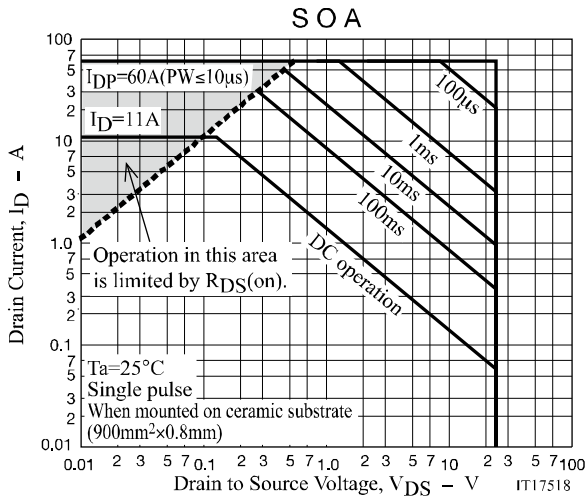
Switching Time Test Circuit



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Package Dimensions

ECH8695R-TL-W

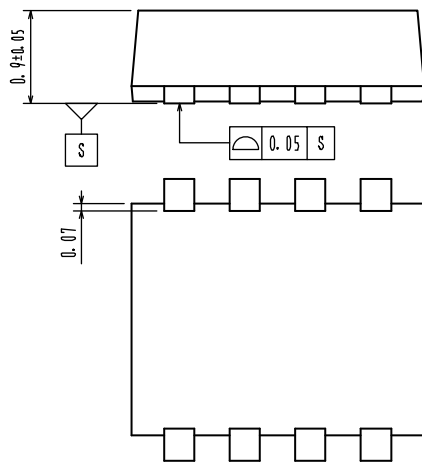
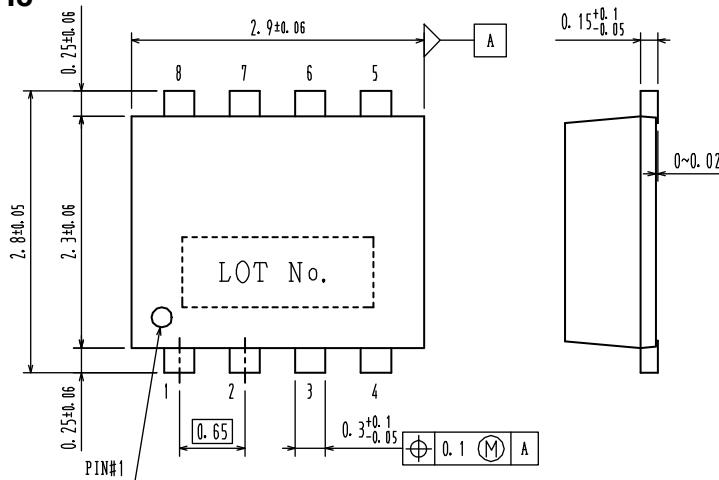
SOT-28FL/ECH8

CASE 318BF

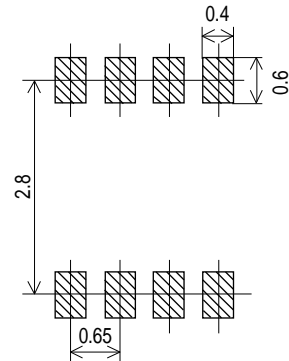
ISSUE O

unit : mm

- 1: Source1
- 2: Gate1
- 3: Source2
- 4: Gate2
- 5: Drain
- 6: Drain
- 7: Drain
- 8: Drain



Recommended Soldering Footprint



Note on usage : Since the ECH8695R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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