



SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

VEC2415 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Composite type facilitating high-density mounting.
- 4V drive.
- Mounting high 0.75mm.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	12	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	0.9	W
Total Dissipation	P _T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0V	60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, 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	y _{fs}	V _{DS} =10V, I _D =1.5A		2.6		S

Marking : UN

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VEC2415

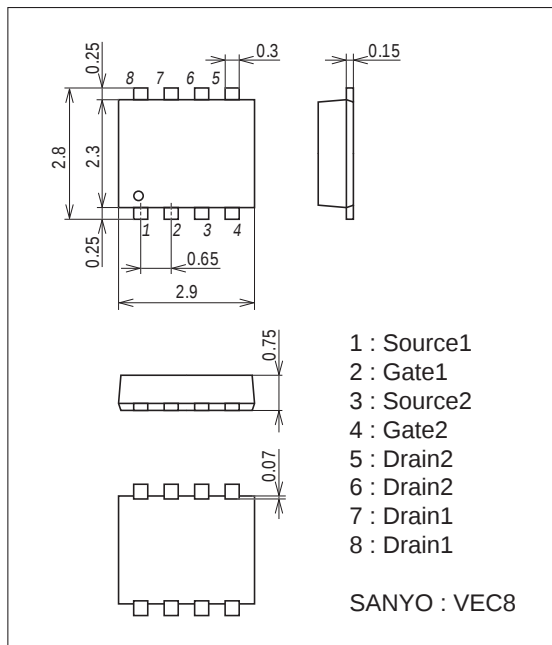
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1.5A, V_{GS}=10V$		62	80	$m\Omega$
	$R_{DS(on)2}$	$I_D=0.75A, V_{GS}=4.5V$		76	106	$m\Omega$
	$R_{DS(on)3}$	$I_D=0.75A, V_{GS}=4V$		83	116	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		505		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		57		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		37		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		7.3		ns
Rise Time	t_r	See specified Test Circuit.		7.5		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		41		ns
Fall Time	t_f	See specified Test Circuit.		22		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=3A$		10		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=30V, V_{GS}=10V, I_D=3A$		1.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=30V, V_{GS}=10V, I_D=3A$		2.1		nC
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0V$		0.81	1.2	V

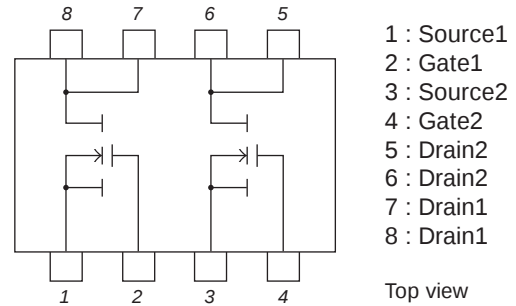
Package Dimensions

unit : mm (typ)

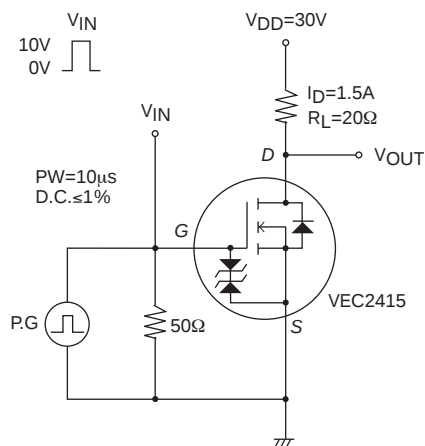
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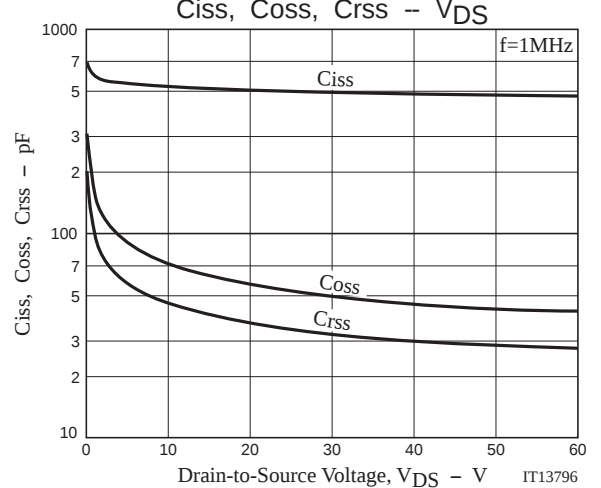
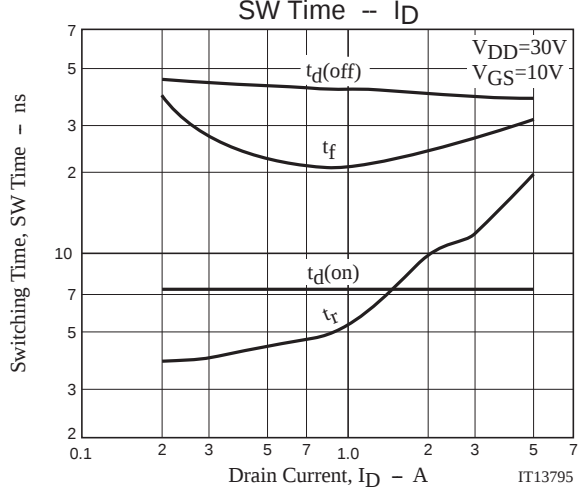
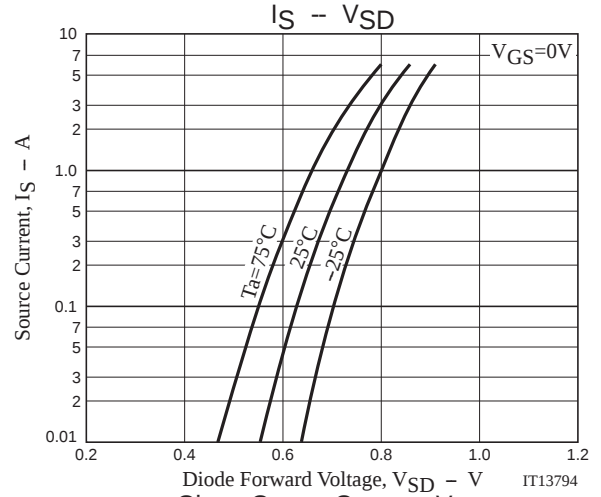
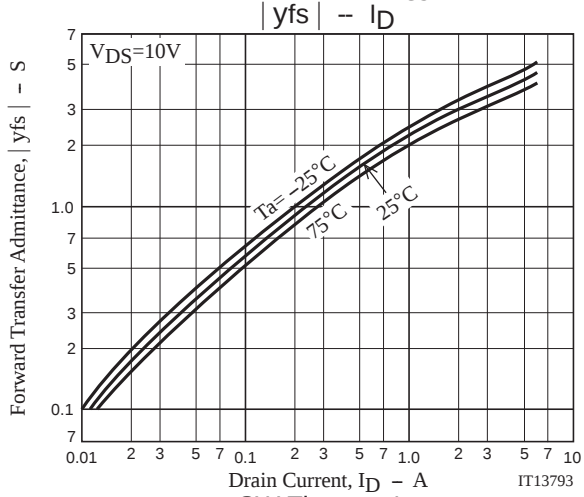
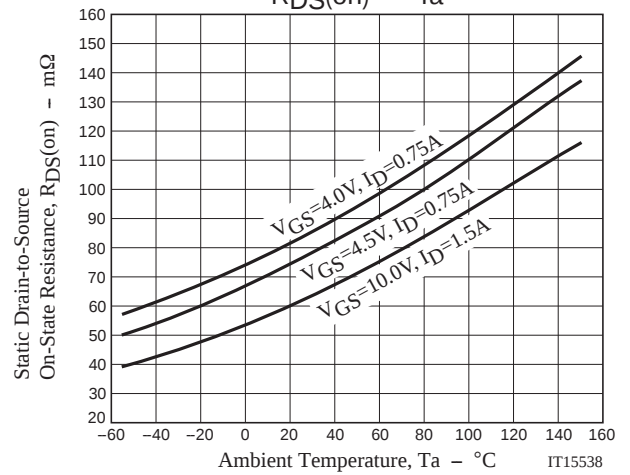
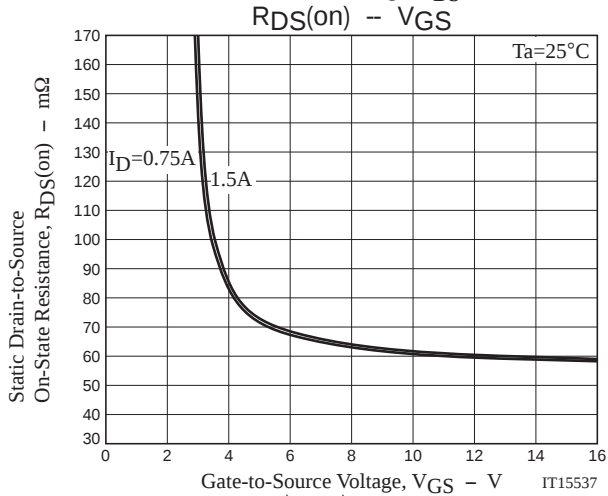
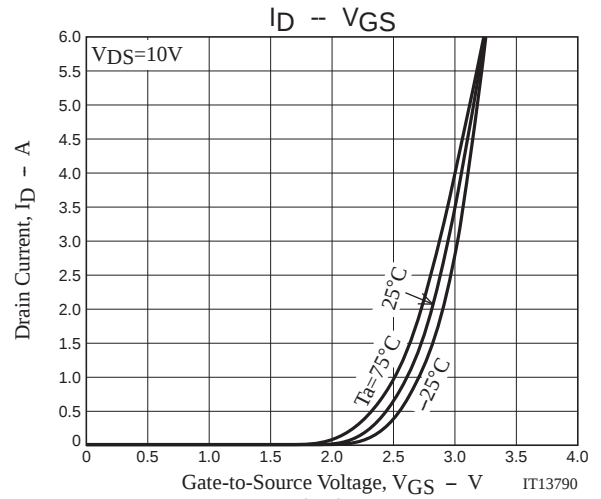
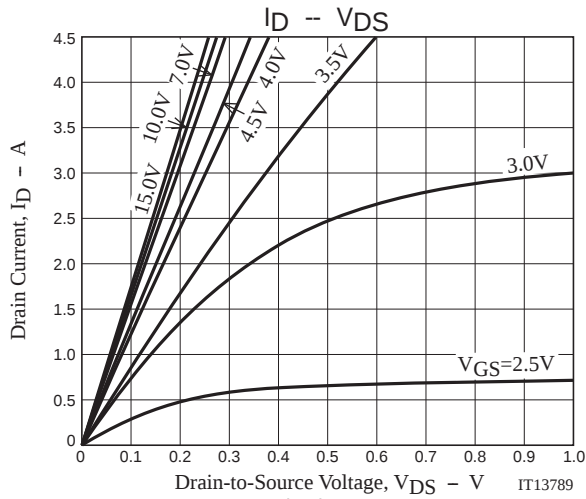


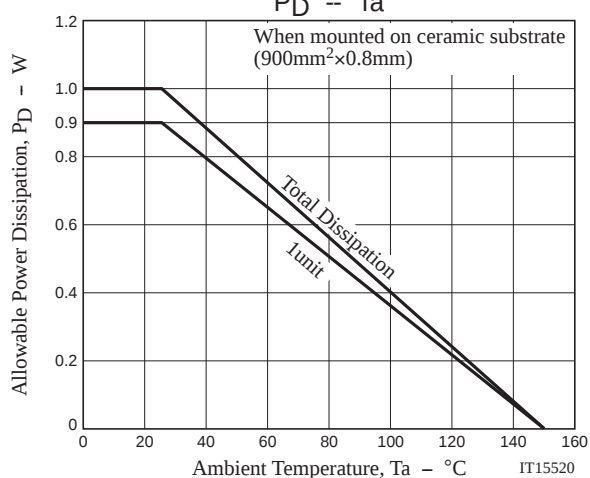
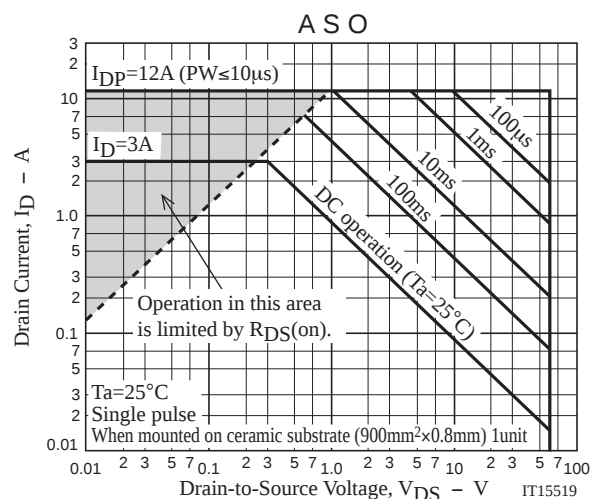
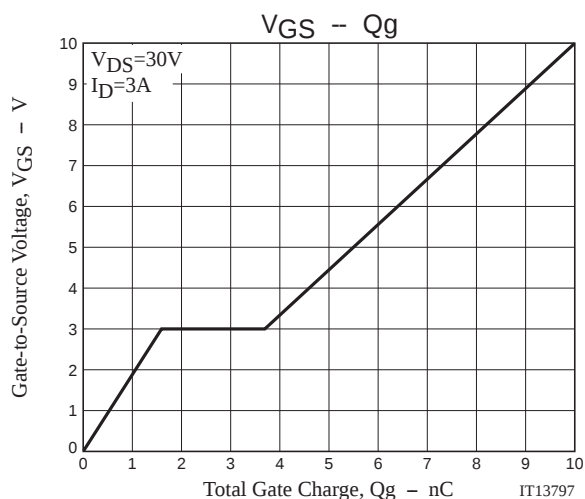
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the VEC2415 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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