



# VEC2315 — P-Channel Silicon MOSFETs

## General-Purpose Switching Device

### Applications

#### Features

- ON-resistance  $R_{DS(on)1}=105m\Omega$ (typ.)
- 4V drive
- High-density mounting
- Protection diode in
- Halogen free compliance

#### Specifications

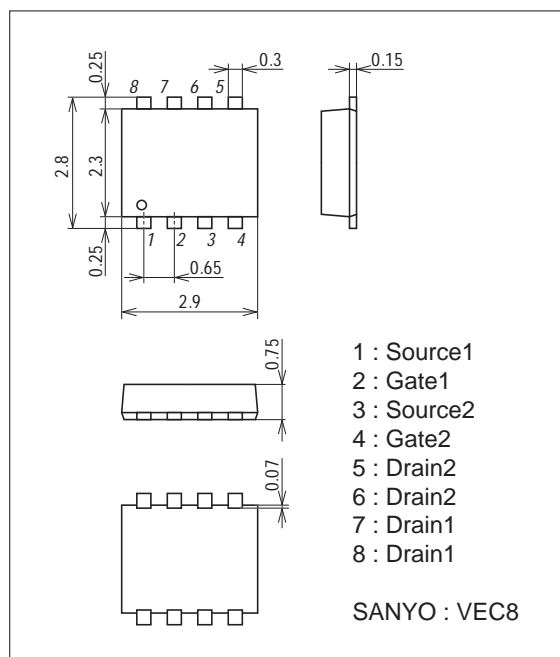
Absolute Maximum Ratings at  $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-60	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-2.5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-10	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	0.9	W
Total Dissipation	$P_T$	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.0	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

#### Package Dimensions

unit : mm (typ)

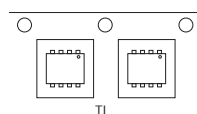
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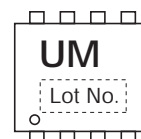
#### Product & Package Information

- Package : VEC8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

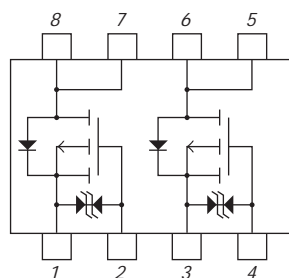
#### Packing Type : TL



#### Marking



#### Electrical Connection

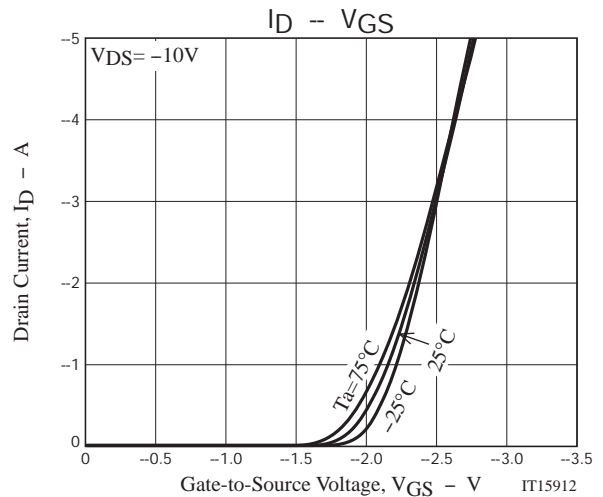
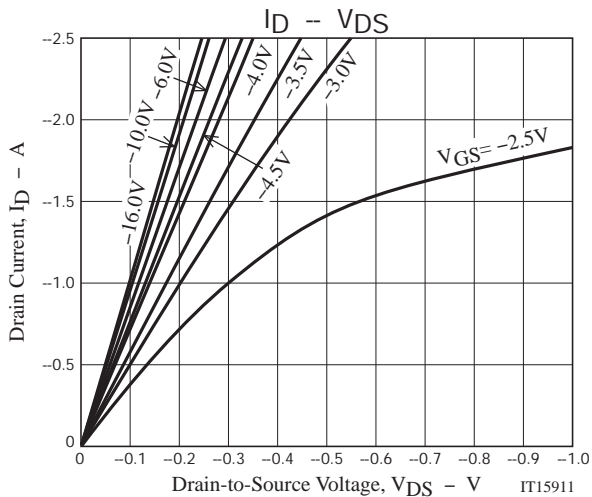
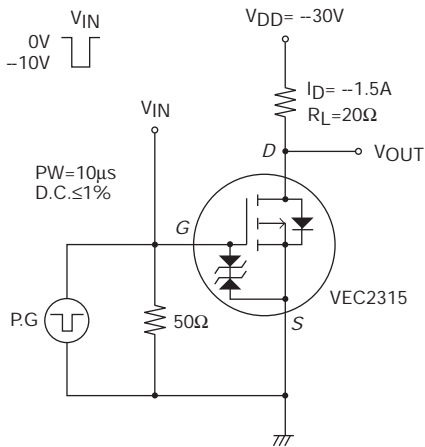


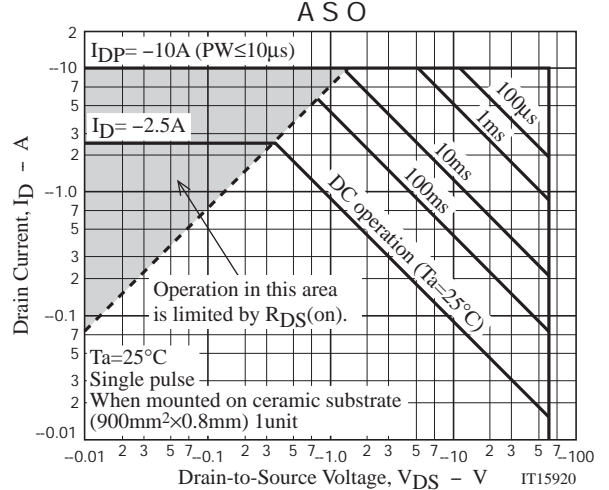
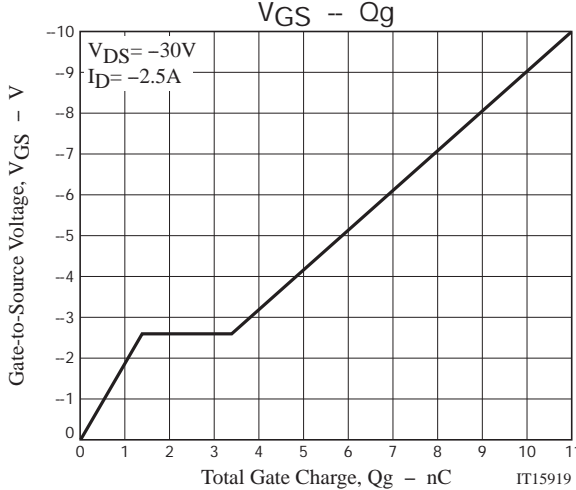
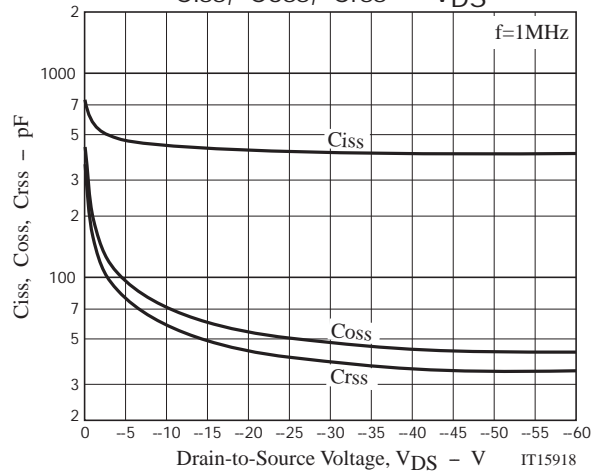
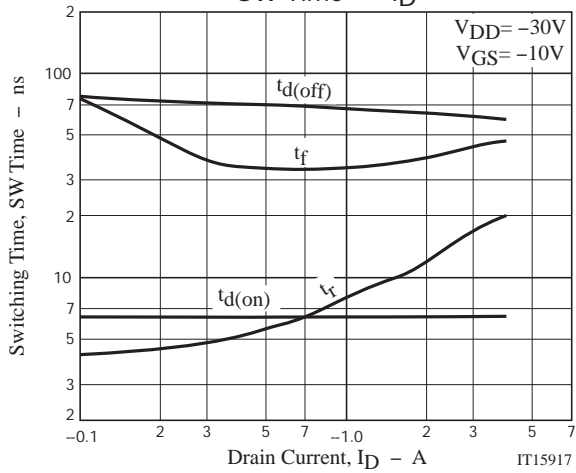
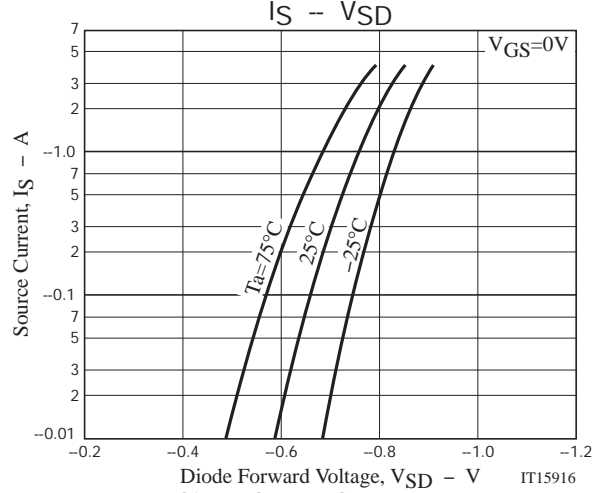
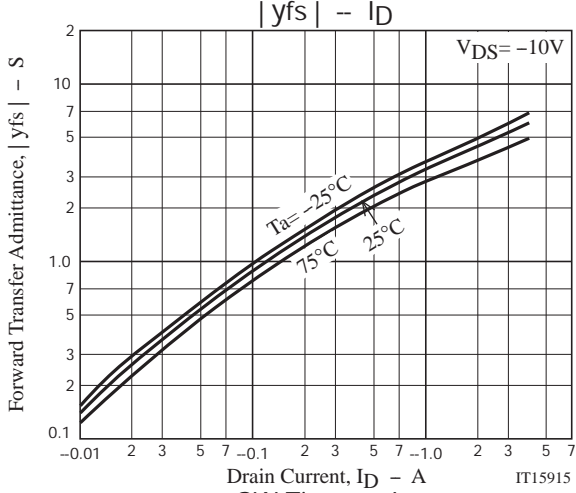
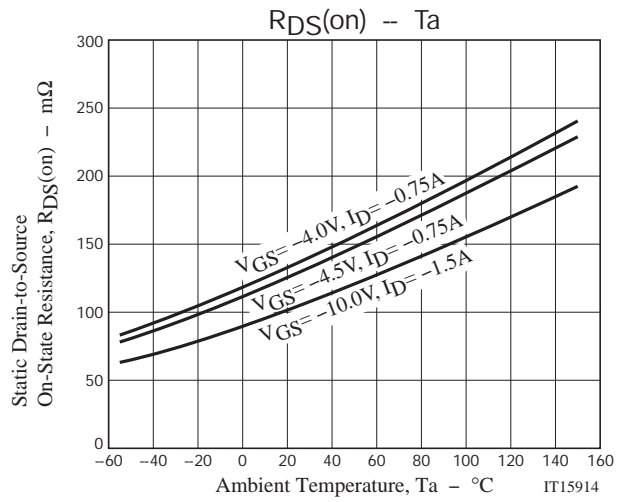
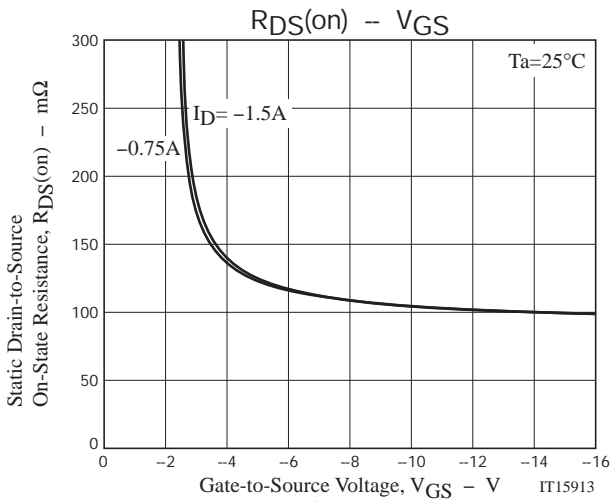
# VEC2315

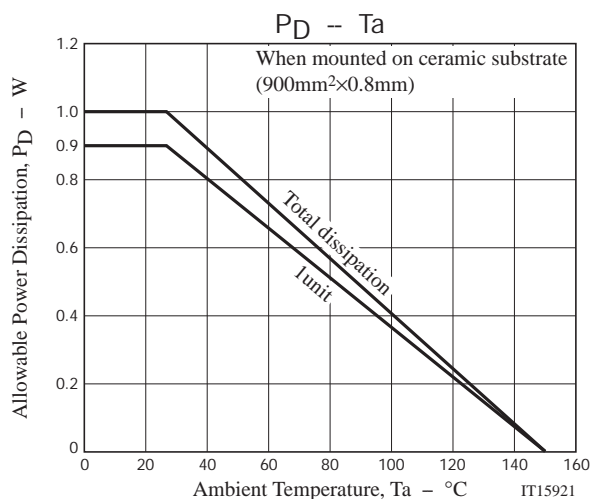
## Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}, V_{GS}=0\text{V}$	-60			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-60\text{V}, V_{GS}=0\text{V}$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}, V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}, I_D=-1\text{mA}$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}, I_D=-1.5\text{A}$		3.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-1.5\text{A}, V_{GS}=-10\text{V}$		105	137	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-0.75\text{A}, V_{GS}=-4.5\text{V}$		128	180	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=-0.75\text{A}, V_{GS}=-4\text{V}$		138	194	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=-20\text{V}, f=1\text{MHz}$		420		pF
Output Capacitance	$C_{oss}$			54		pF
Reverse Transfer Capacitance	$C_{rss}$			44		pF
Turn-ON Delay Time	$t_d(on)$		See specified Test Circuit.		6.4	
Rise Time	$t_r$			9.8		ns
Turn-OFF Delay Time	$t_d(off)$			65		ns
Fall Time	$t_f$			36		ns
Total Gate Charge	$Q_g$	$V_{DS}=-30\text{V}, V_{GS}=-10\text{V}, I_D=-2.5\text{A}$			11	
Gate-to-Source Charge	$Q_{gs}$			1.4		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			2		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-2.5\text{A}, V_{GS}=0\text{V}$		-0.83	-1.2	V

## Switching Time Test Circuit







Note on usage : Since the VEC2315 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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