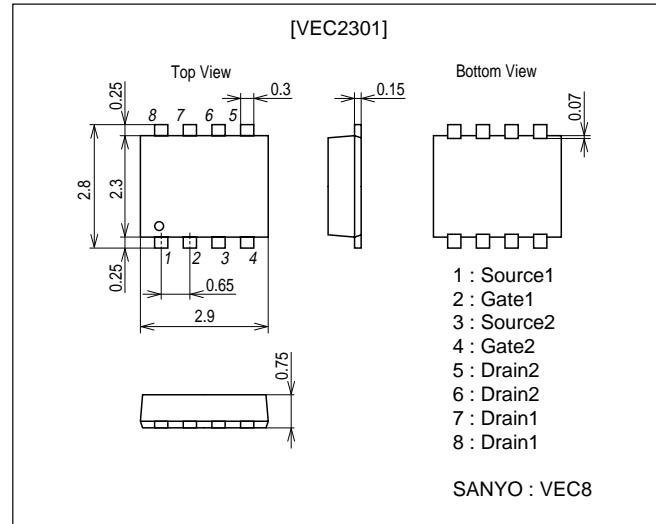


**VEC2301****General-Purpose Switching Device Applications****Features**

- Best suited for load switches.
- Low ON-resistance.
- 2.5V drive.
- Composite type, facilitating high-density mounting.
- Mount height 0.75mm

**Package Dimensions**unit : mm  
2227**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-20	V
Gate-to-Source Voltage	V <sub>GS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-3	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-12	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> X0.8mm)1 unit	0.9	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (900mm <sup>2</sup> X0.8mm)	1.0	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-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 <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-20			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA

Marking : BA

Continued on next page.

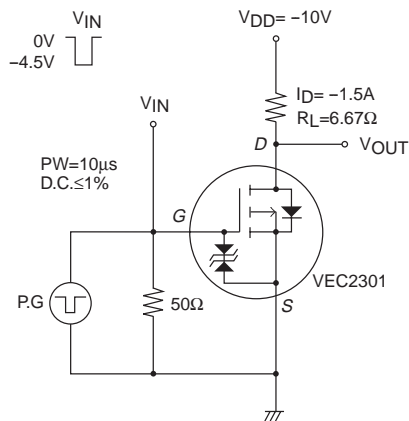
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# VEC2301

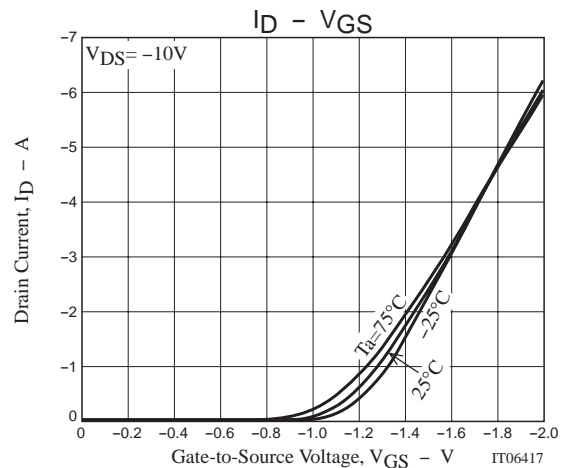
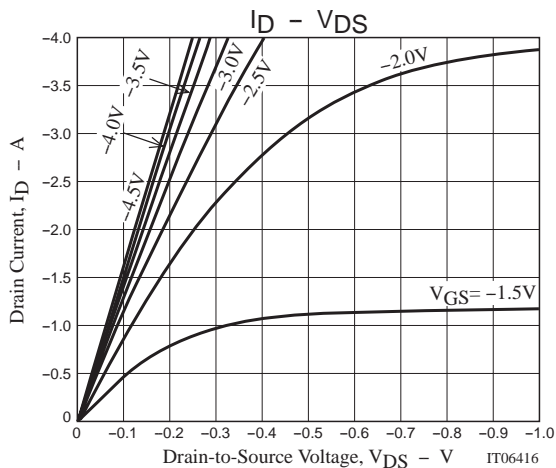
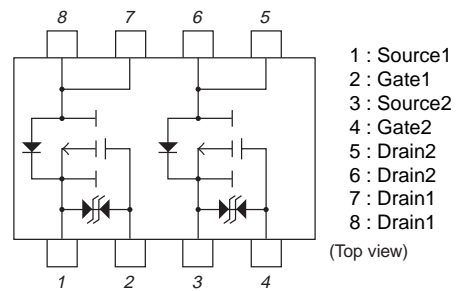
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-1.5A$	2.9	4.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-2A, V_{GS}=-4.5V$		62	81	$m\Omega$
	$R_{DS(on)2}$	$I_D=-1A, V_{GS}=-2.5V$		87	120	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, f=1MHz$		680		pF
Output Capacitance	$C_{oss}$	$V_{DS}=-10V, f=1MHz$		115		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=-10V, f=1MHz$		80		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		13		ns
Rise Time	$t_r$	See specified Test Circuit.		53		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		77		ns
Fall Time	$t_f$	See specified Test Circuit.		62		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-3A$		8.2		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-3A$		1.7		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-3A$		2.1		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-3A, V_{GS}=0$		-0.88	-1.2	V

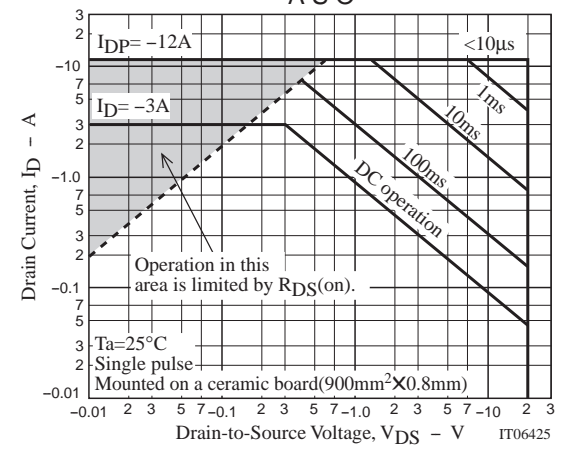
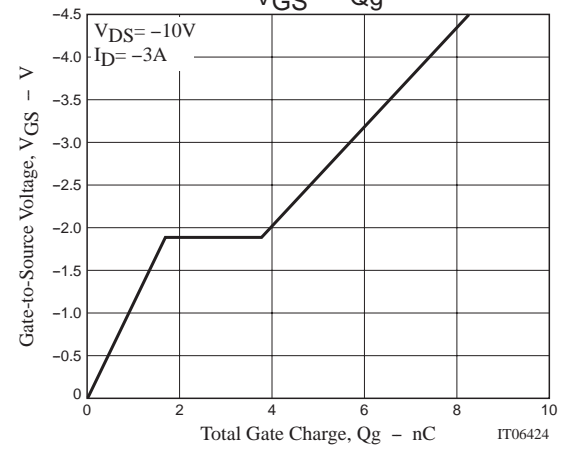
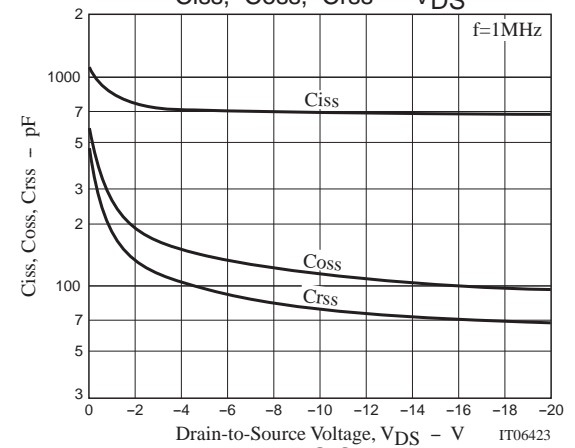
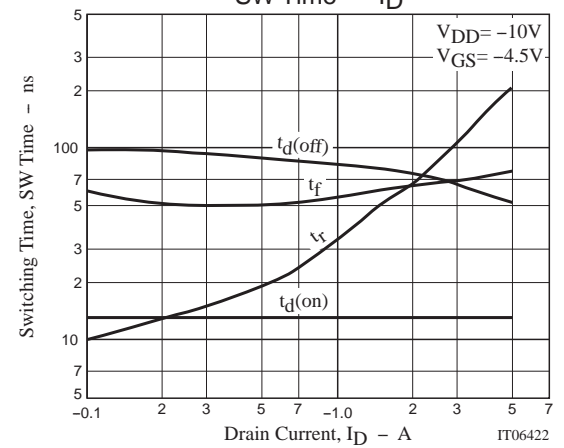
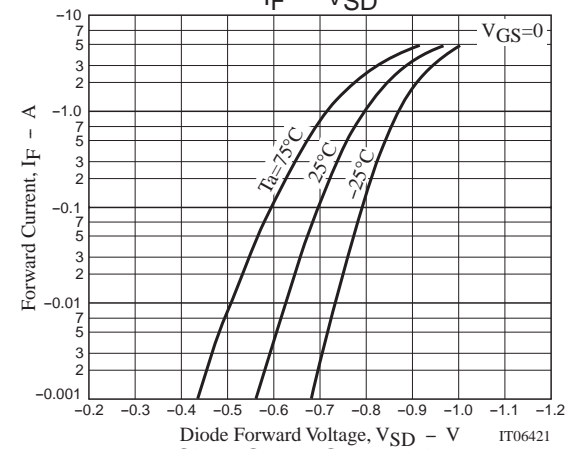
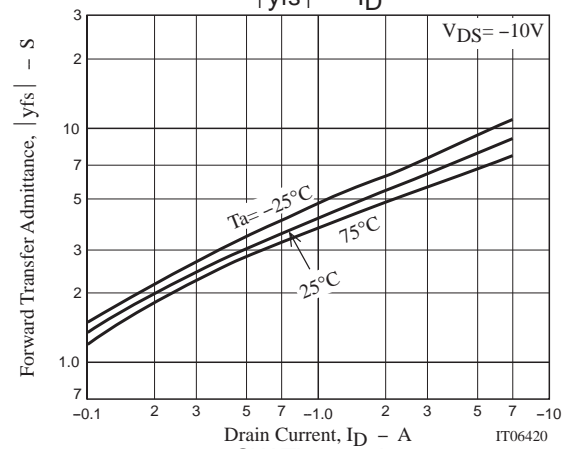
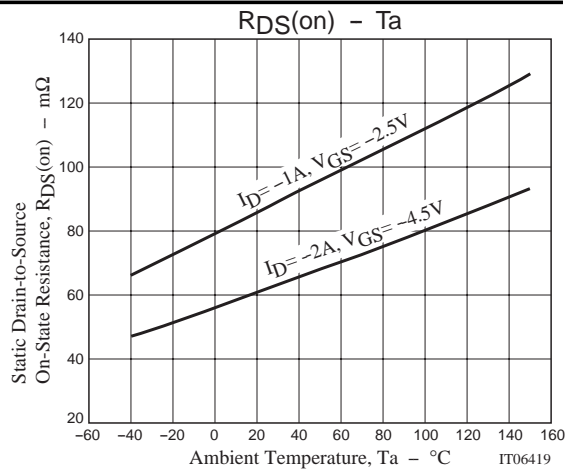
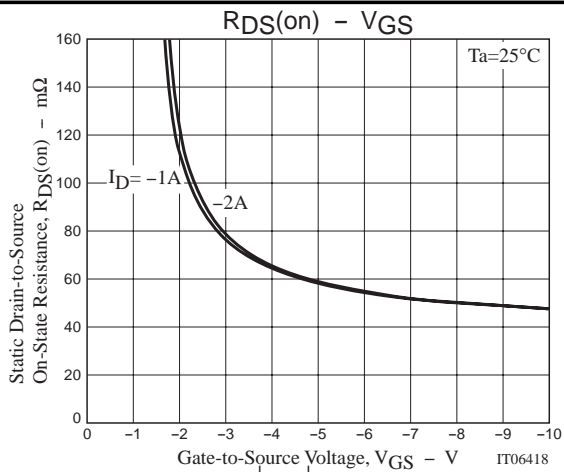
## Switching Time Test Circuit

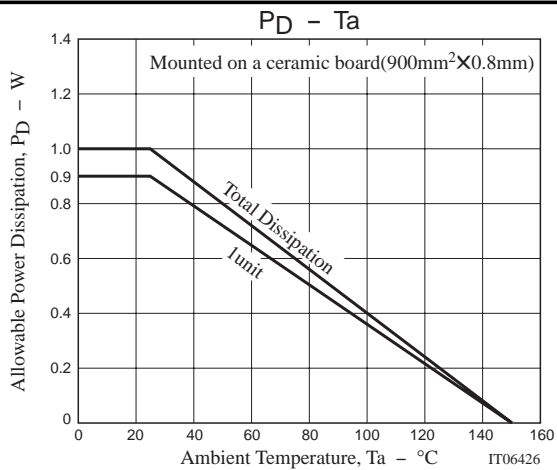


## Electrical Connection



# VEC2301





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