



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

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
- Protection diode in

## Specifications

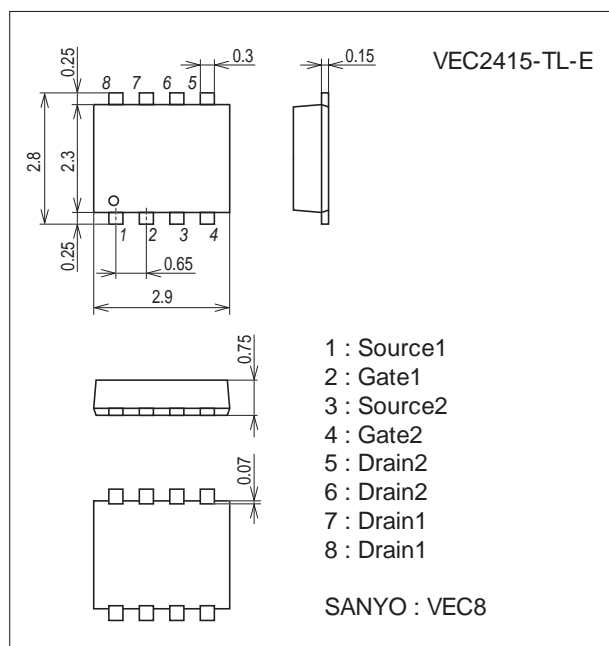
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		60	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	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>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	0.9	W
Total Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.0	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

## Package Dimensions

unit : mm (typ)

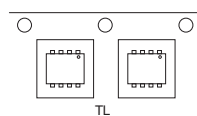
7012-002



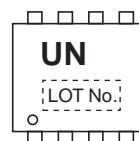
## Product & Package Information

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

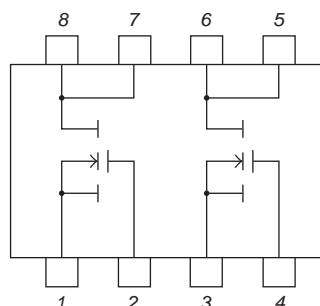
## Packing Type : TL



## Marking



## Electrical Connection

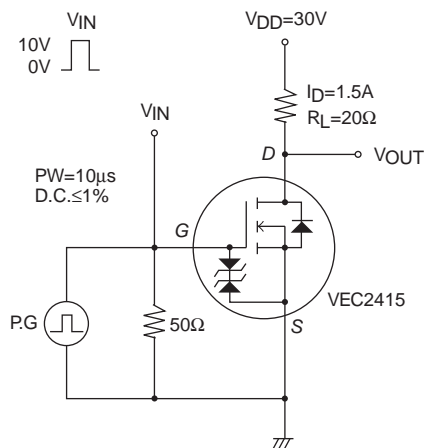


# VEC2415

## Electrical Characteristics at Ta=25°C

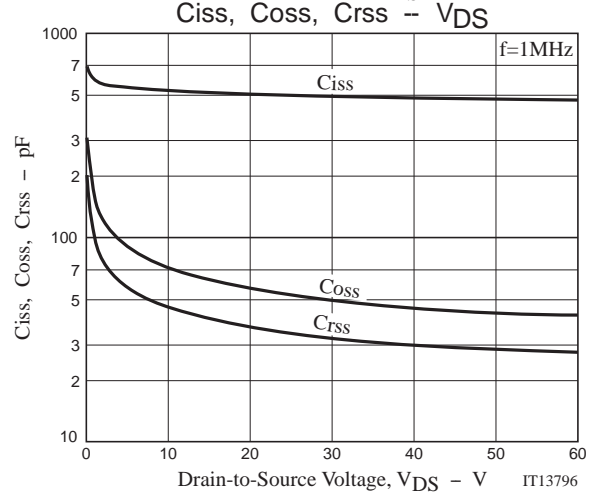
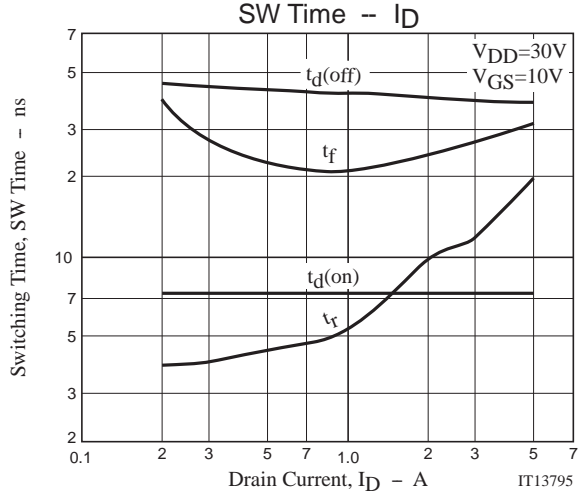
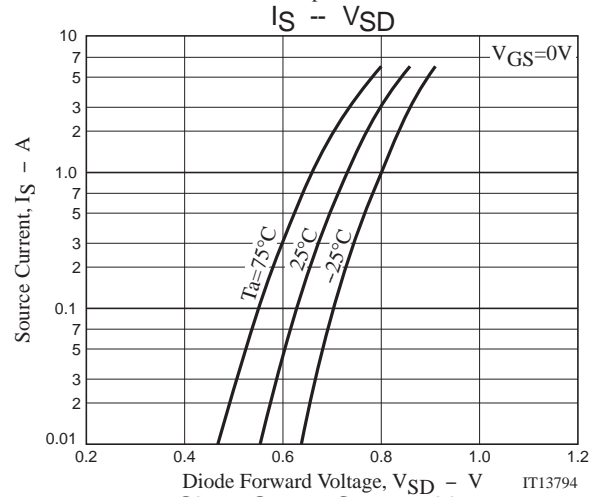
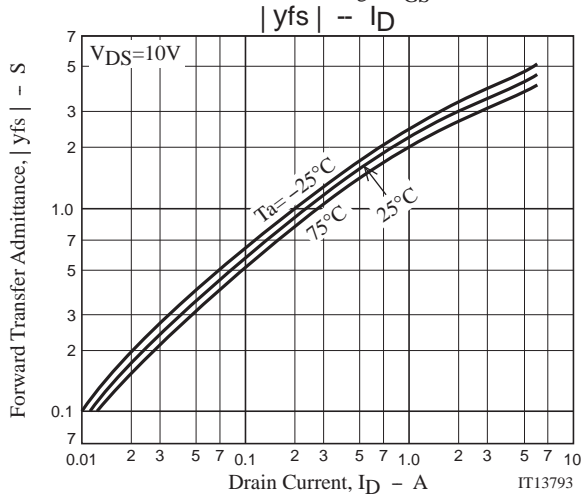
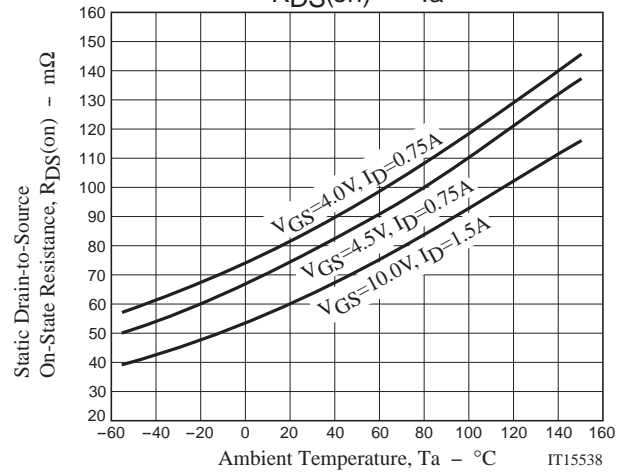
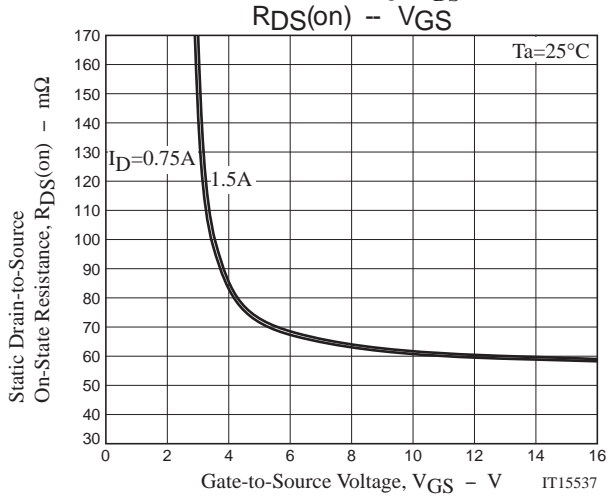
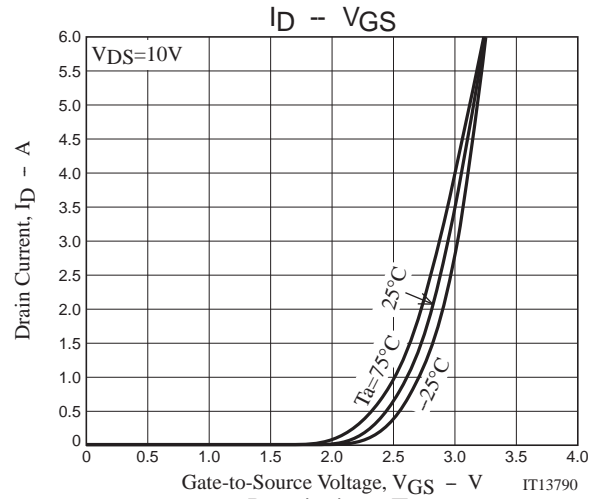
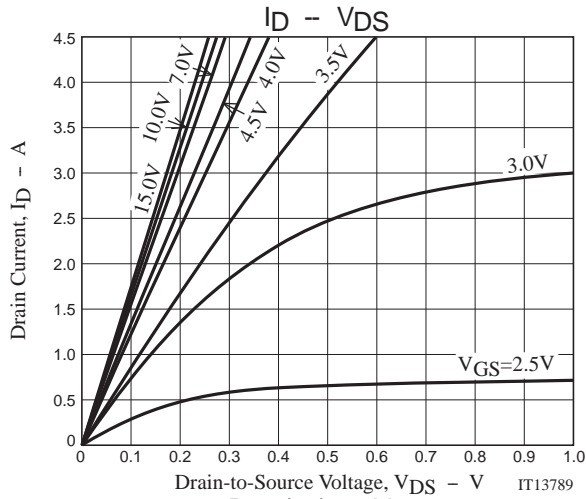
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	60			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0V$			$\pm 10$	$\mu A$
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
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	$C_{oss}$			57		pF
Reverse Transfer Capacitance	$C_{rss}$			37		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		7.3		ns
Rise Time	$t_r$			7.5		ns
Turn-OFF Delay Time	$t_d(off)$			41		ns
Fall Time	$t_f$			22		ns
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=10V, I_D=3A$		10		nC
Gate-to-Source Charge	$Q_{gs}$			1.6		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			2.1		nC
Diode Forward Voltage	$V_{SD}$	$I_S=3A, V_{GS}=0V$		0.81	1.2	V

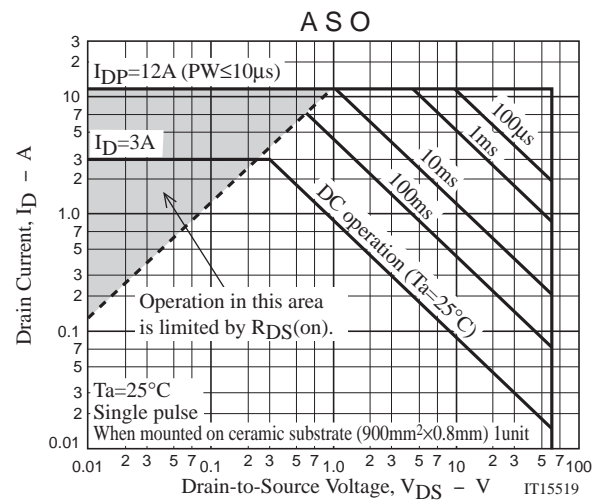
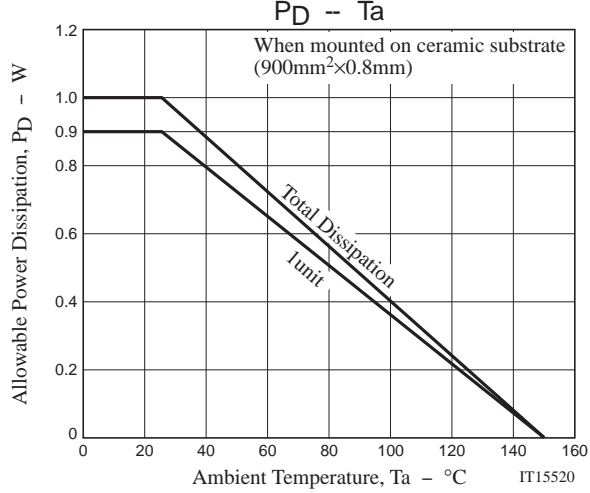
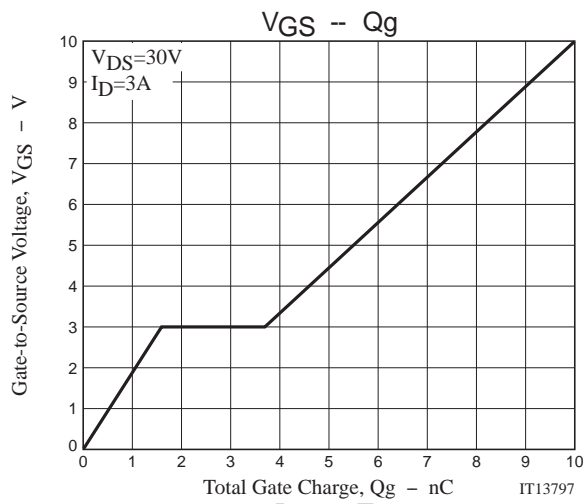
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
VEC2415-TL-E	VEC8	3,000pcs./reel	Pb Free





# Taping Specification

VEC2415-TL-E

## 1. Packing Format

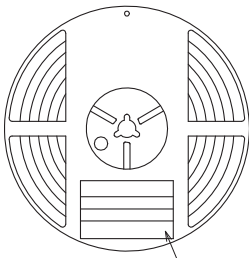
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
VEC8	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label  
(unit:mm)

Outer box label

It is a label at the time of factory shipments.  
The form of a label may change in physical  
distribution process.

### Packing method



Reel label

Type No.  
LOT No.  
Quantity  
Origin

69	(P) TYPE 000000000
	(17) LOT 00
	(Q) QTY 0,000 (1) LEAD FREE *
	(S) SPECIAL
	*Z0722005310C*
	ASSEMBLY:**** ( DIFFUSION:**** )

108	TYPE CODE
	*000000000000*
	TYPE 00000000
	QTY 0,000 PCS (1) LEAD FREE *
	LOT 00000000
	PACKAGE 00000000
	SPECIAL
	*Z0722005310C*
	ASSEMBLY:**** ( DIFFUSION:**** )

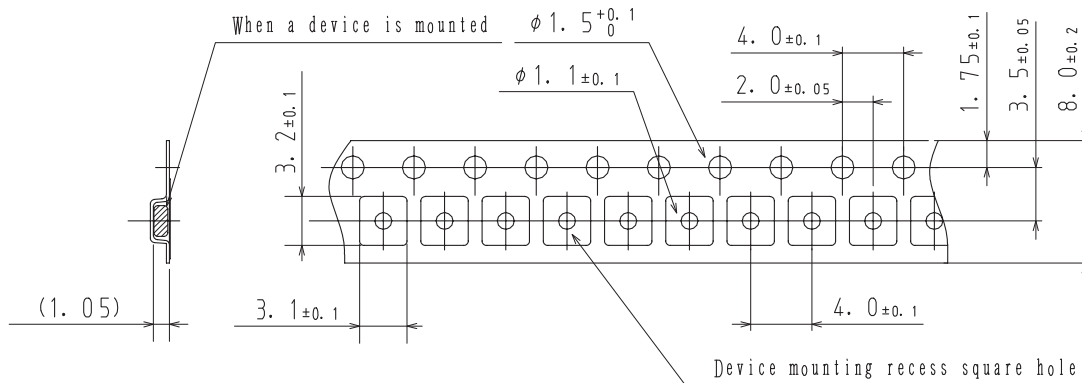
NOTE (1)

The LEAD FREE \* description shows that the surface  
treatment of the terminal is lead free.

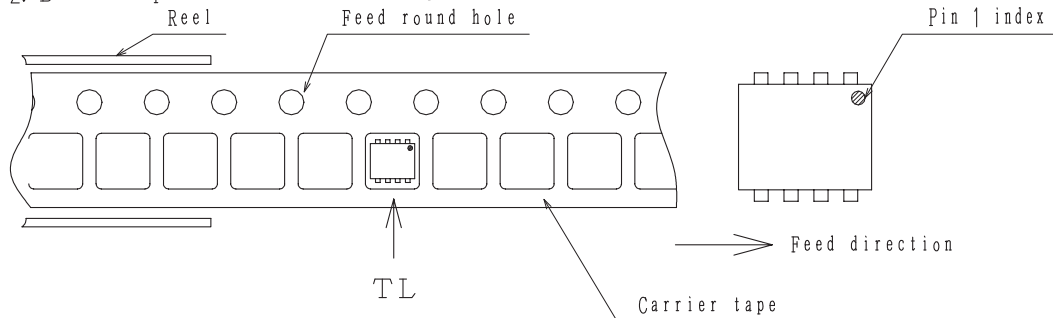
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

## 2. Taping configuration

### 2-1. Carrier tape size (unit:mm)



### 2-2. Device placement direction

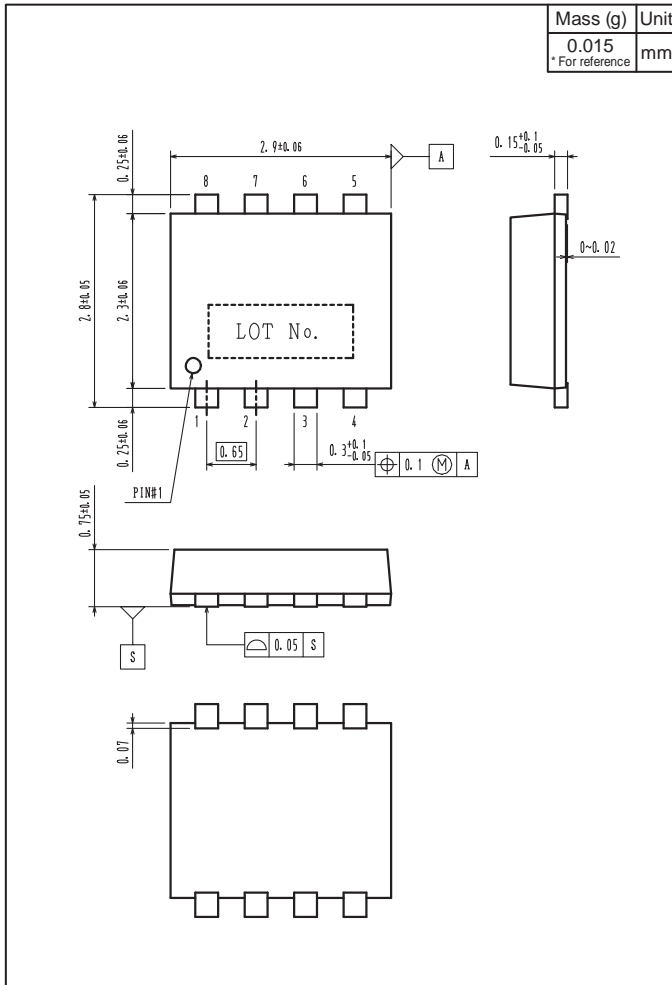


Those with oen electrode terminal on the feed hole side.....TL

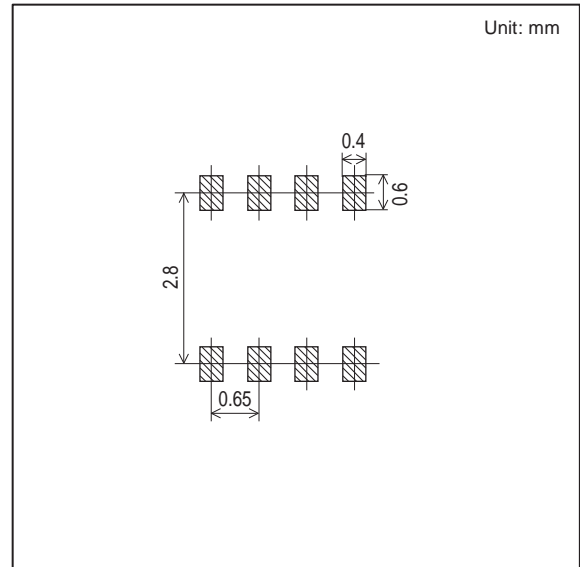
**VEC2415**

## Outline Drawing

VEC2415-TL-E



### Land Pattern Example



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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