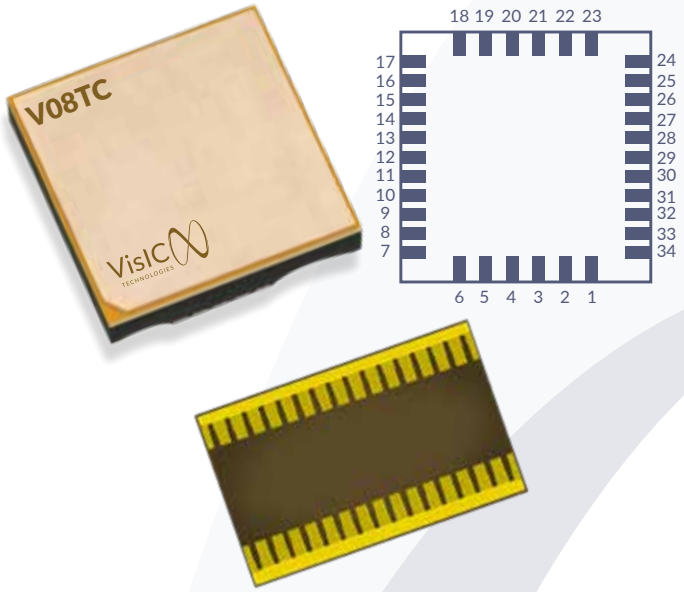
8mΩ 650V D³GaN™ Power FET

V08TC065S1X11

Description

The D³GaN™ (Direct Drive D-Mode) V08TC065S1X11 Power Switch integrates a patented, high-density, lateral GaN power transistor, into a Normally-Off product with extremely low $R_{DS(ON)}$ and exceptionally efficient switching performance. The D³GaN™ technology has been implemented into an Isolated High Power SMD package, an innovation by VisIC Technologies, very effective in applications requiring High Power and Efficiency, with Low Volume and Cost.

The integrated safety functions ensure safe operation during system start up and shutdown, while having no impact on the switching performance of the GaN transistor.



Key features

- Ultra-fast switching
- Kelvin connection
- Normally-Off
- High power density
- Fully isolated package (3.5KV)
- High Threshold Voltage
- Driven by standard 15V MOSFET driver
- Top cooling
- Package Size 21x23x3mm

* GaN die/wafer purchase is possible; please contact us.

Applications

- Solar Inverter
- AC-DC Power Supply
- AC motor
- Battery charger
- Automotive
- Laser driver

Key Performance Parameters

Parameter	Value
V_{DS} (V)	650
$R_{DS(ON)}$ (mΩ)	8
Q_G (nC)	110
$I_{D,pulse}$ (A)	380
I_D (A)	180

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Maximum ratings (Tc = 25°C unless otherwise specified)						
Parameter	**Symbol**	**Values**			**Unit**	**Conditions**
		Min	**Typical**	**Max**		
Continuous drain current	I_D	- -	- -	200 145	A	T_C =25°C T_C =100°C
Pulsed drain current[1)]	$I_{D,pulse}$	-	-	380	A	
Gate source voltage[2)]	V_{GS}	-25	-	+6	V	
Power dissipation	P_{TOT}	-	-	500	W	
Operating and storage temperature	T_j ,T_{stg}	-55	-	+150	°C	
	T_C	-	-	+150		
Continuous reverse current	I_s	-	-	200	A	
Reverse pulse current[1)]	$I_{s,pulse}$	-	-	380	A	
Thermal characteristics						
Parameter	**Symbol**	**Values**			**Unit**	**Conditions**
		Min	**Typical**	**Max**		
Thermal resistance, junction - case	$R_{\theta JC}$	-	-	0.1	°C/W	Junction to top thermal pad
Thermal resistance, junction - ambient	$R_{\theta JA}$	-	-	65	°C/W	
Soldering peak temperature	T_{sold}	-	-	260	°C	from case for 10s
Time within 5°C from peak soldering temperature	tc			30	S	

1) Duty cycle =10% and pulse width limited by Tjmax

2) See Typical Operating Circuit, VGS defined between terminals 3&4

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