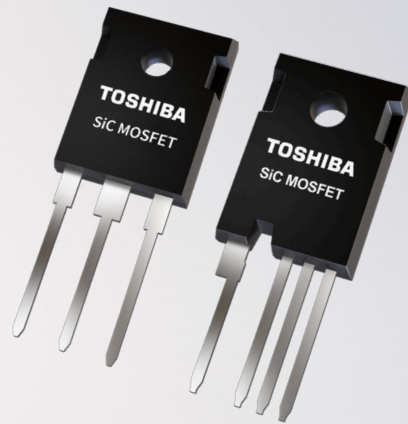


# SiC Snacks

## Bite Sized Benefits



Wide  $V_{GSS}$  and high  $V_{th}$  ratings

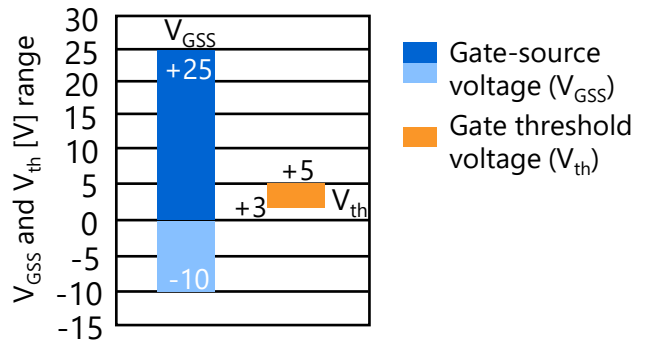
## What does it mean?



$V_{GS}$  is the voltage that is applied between the gate and the source of a switching device in order to drive it, with  $V_{GSS}$  denoting the maximum acceptable values for this. If the  $V_{GSS}$  figures are exceeded, then the MOSFET could be damaged. As silicon carbide (SiC) MOSFETs have higher power densities than their silicon counterparts, heightened  $V_{GSS}$  characteristics are important, so that the possibility of unwanted short circuits and other functional problems are safeguarded against. Alongside this, a high gate-threshold voltage ( $V_{th}$ ) will help to ensure against false turn-ons (due to high levels of noise) occurring.

## What's the benefit?

The ability to specify MOSFETs that have expanded  $V_{GSS}$  figures is certain to be of value to engineers. This will mean that greater tolerances can be accommodated within their power system designs. Consequently, noise issues, acceleration in switching speeds and variations in environmental conditions (such as ambient temperature) are less likely to impact on overall operational performance.



## SiC MOSFET 3<sup>rd</sup> generation line-up

$V_{DSS} : 650V$			$V_{DSS} : 1200V$		
$R_{DS(ON)}$ (typ)	TO-247	TO-247-4L	$R_{DS(ON)}$ (typ)	TO-247	TO-247-4L
15m $\Omega$	TW015N65C	TW015Z65C*	15m $\Omega$	TW015N120C	TW015Z120C*
27m $\Omega$	TW027N65C	TW027Z65C*	30m $\Omega$	TW030N120C	TW030Z120C*
48m $\Omega$	TW048N65C	TW048Z65C*	45m $\Omega$	TW045N120C	TW045Z120C*
83m $\Omega$	TW083N65C	TW083Z65C*	60m $\Omega$	TW060N120C	TW060Z120C*
107m $\Omega$	TW107N65C	TW107Z65C*	140m $\Omega$	TW140N120C	TW140Z120C*

\* Under development

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