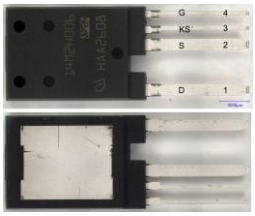
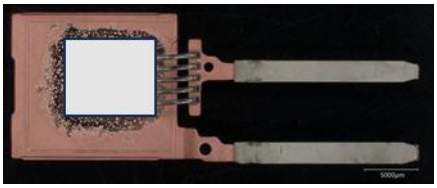
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SiC MOSFET (1400V)： Infineon IMYR140R006M2H Package, SiC MOSFET Analysis Report





Package TO-247PLUS-4



SiC MOSFET

Report Overview

In October 2025, Infineon announced the 1400V CoolSiC in a TO-247PLUS package [1]. This product features a large-area SiC chip that achieves an ultra-low on-resistance of approximately 6 mΩ and a high drain current of around 188 A, and is intended for use in high-power applications such as xEV chargers, battery energy storage systems (BESS), commercial vehicles, construction equipment, and agricultural machinery.

Following our report on the structure, electrical characteristics, and SCM analysis (25G-0584-1-4: IMZC140R038M2H) of the 1400V CoolSiC MOSFET, this new report analyzes its package/mounting structure and chip configuration/layout. It can be utilized as a benchmarking reference to understand Infineon's latest SiC power device design philosophy and packaging technology.

[1] https://www.infineon.com/market-news/2025/INFGIP202510-010

Product Features

Part number: IMYR140R006M2H Vdss=1400V, RON=5.8mΩ, Id=188A (100℃) mΩ
Released data: Oct. 2025

Datasheet：IMYR140R006M2H

Analysis result summary

(1) Package Structure Analysis Report (27 pages)

- This product features approximately 1.5 times the available die area compared to the TO-247-4 (IMZC140R038M2H) in the same series, enabling the mounting of large, low on-resistance dies.
- An ultra-thin die attach utilizing .XT Technology is formed.

(2) SiC MOSFET Die Configuration and Layout Analysis Report (24 pages)

- The Ron x AA value—obtained by multiplying the on-resistance (Ron) by the active area (AA) of the transistor—is equivalent to that of the company's second-generation SiC MOSFETs.
- This report analyzes the impact of die size and defect density on manufacturing yield.

Report price

Delivered one week after order placement. Please contact us for report pricing.

Report No：25R-0584-5,6 Release day：2026.07.15

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(2) SiC MOSFET Die Configuration and Layout Analysis Report　Table of Contents

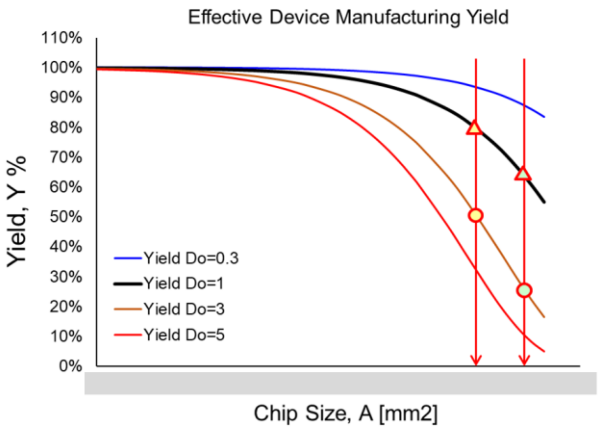
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(1) Excerpt from Package Structure Analysis Report

Based on the datasheet.

		IMZC140R038M2H		IMYR140R006M2H
Package		TO-247-4		TO-247 4 PLUS
Vdss	V	1400		1400
DC Id @ Tc=25°C	A	52		246
100°C	A	37		188
Transient Max Vgs	V	-10~25		-10~25
Avalanche Energy (Single)	mJ	255		865
Max Tj	°C	175		175
Thermal Resistance, Rthjc(max)	°C/W	0.62		0.15
Power Dissipation, Pd @Tc=25°C	W	242		974
100°C	W	121		487
ON Resistance, Ron @ Id	A	20.4		138.2
@ Vgs	V	18		18
Ron (typ) 25°C	mΩ	38		5.8
Ron (typ) 150°C	mΩ	81.3		12
Ron (max) 150°C	mΩ	106.5		15.7
Ron (typ) 175°C	mΩ	94		14
Threshold Voltage, Vth	V	4.2		4.2
Transconductance, gm	S	13		94
Internal gate resistance, Rgi	Ω	2.75		2.3
Input gate capacitance, Ciss	pF	1480		9590
Output Capacitance, Coss	pF	50		336
Reverse transfer Capacitance, Crss	pF	4.5		31
Coss stored energy, Eoss	uJ	32		213
Total gate charge, Qg	nC	41		302
Plateau gate charge, Qgs(pl)	nC	11.6		100
Gate-drain charge, Qgd	nC	10.6		60
Energy losses at Vds=1000V				
Turn-on Energy, Eon @ 175°C	uJ	504		6010
Turn-off Energy, Eoff @ 175°C	uJ	58		3400
Reverse Recovery, Efr @ 175°C	uJ	276		2700
Total Esw = Eon+Eoff+Efr @175°C	uJ	570		12110

(2) Excerpt from SiC MOSFET Die Configuration and Layout Analysis Report



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