

Standard Part Release Form

Date: August 17

iDEAL Part Number: iS20M5R5S1TC

Date Sheet Link: <https://idealsemi.com/wp-content/datasheets/iS20M5R5S1TC-Datasheet.pdf> Note: Please use link as it is most updated specification. Copy and paste.

Product Family: MOSFET

Series: 200V

Description:

Engineered for high-efficiency SMPS and motor drives, this 200V SuperQ MOSFET delivers ultra-low conduction and switching losses in a robust TOLT package. Featuring best-in-class RDS(on) and QSW, it minimizes heat dissipation at both full and partial loads.

Parameter	Typ	Max	Unit
V _{DS}		200	V
R _{DS(on)} @ 10V	4.8	5.5	mΩ
I _D		175	A
Q _G	108	140	nC
Q _{SW}	6.6		nC
E _{OSS}	4.1		μJ

Pricing:

Part Number	Package Type	Reel Size	MPQ	Pricing Type	MOQ	Price Break	Book Cost	Suggested Resale
iS20M5R5S1TC	TOLT	13"	1300	Book	1300	1		\$ 9.9000
iS20M5R5S1TC	TOLT	13"	1300	Book		10		\$ 6.7565
iS20M5R5S1TC	TOLT	13"	1300	Book		100		\$ 4.9250
iS20M5R5S1TC	TOLT	13"	1300	Book		500		\$ 4.4636
iS20M5R5S1TC	TOLT	13"	1300	Book		1,300	\$ 3.1592	\$ 4.1029
iS20M5R5S1TC	TOLT	13"	1300	Book		5,000		\$ 3.3906
iS20M5R5S1TC	TOLT	13"	1300	Book		10,000		\$ 3.0823
iS20M5R5S1TC	TOLT	13"	1300	Book		26,000	\$ 2.3817	\$ 2.8020

Product Picture:



Export codes:

- ECCN Number: EAR99
- ITAR: No
- HTS Code: 8541.29.0095
- Country of Origin: USA

Product justification:

The **iS20M5R5S1TC** is a high-performance **200V SuperQ® MOSFET** optimized for high-efficiency power conversion and motor drive applications. Featuring an industry-leading **5.5mΩ maximum $R_{DS(on)}$** in the thermally efficient **TOLT package**, it delivers exceptionally low conduction losses while minimizing switching losses through low **QSW** and **EOSS** characteristics.

Engineered for demanding applications requiring high current capability, thermal robustness, and fault tolerance, the iS20M5R5S1TC supports up to **175A continuous drain current**, offers **high short-circuit withstand capability (SCWC)**, and is rated for operation up to **175°C junction temperature**.

Features:

- Excellent alternative to Infineon IPTC068N20NM6.
- Industry-leading $R_{DS(on)}$ at 200V in TOLT package. The on-resistance of the **iS20M5R5S1tc** is 12% lower than the Infineon alternative.
- High short-circuit withstand capability (SCWC)
- 100% UIS tested in production
- Ease of paralleling with +/-0.5V gate threshold
- Low thermal resistance (**$R_{\theta JC} = 0.35^{\circ}\text{C/W}$**) for excellent heat dissipation.
- 175°C industrial temperature rating

Applications:

- Industrial motor drives and motor control.
- Boost converters.
- Primary-side switch-mode power supplies (SMPS).
- Secondary-side synchronous rectification.
- Battery management systems (BMS)
- Energy storage systems (ESS)
- Telecom and industrial DC-DC converters.