JMH65R190PCFD

Features

- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS Tested
- 100% ûVds Tested
- Halogen-free; RoHS-compliant

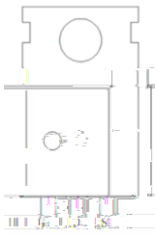
Applications

- SMPS with PFC
- Flyback
- Silver ATX,adapter,TV,lighting,Telecom

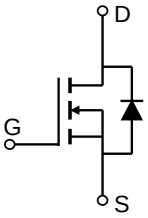
Product Summary

Parameters	Value	Unit
V_{DSS}	650	V
$V_{GS(th)\_Typ}$	3.4	V
I_D(@V_{GS}=10V)	15	A
$R_{DS(ON)\_Typ}$(@V_{GS}=10V	156	mΩ

TO-220-3L Top View



Pin Assignment



Schematic Diagram

Ordering Information

Device	Marking	MSL	Form	Package	Tube(pcs)	Per Carton (pcs)
JMH65R190PCFD-U	H65R190PF	N/A	Tube	TO-220-3L	50	5000

Absolute Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DS}	Drain-to-Source Voltage		650	V
V_{GS}	Gate-to-Source Voltage		±30	V
I_D	Continuous Drain Current	T_C = 25°C	15	A
		T_C = 100°C	10	
I_{DM}	Pulsed Drain Current [1]		Refer to Fig.4	A
E_{AS}	Single Pulsed Avalanche Energy [2]		65	mJ
P_D	Power Dissipation	T_C = 25°C	114	W
		T_C = 100°C	45	
T_J, T_{STG}	Junction & Storage Temperature Range		-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Max	Unit
R -$	Thermal Resistance, Junction to Ambient[3]	68	°C/W
R -&	Thermal Resistance, Junction to Case	1.1	

Electrical Characteristics (T_J = 25°C unless otherwise specified)

Symbol		Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$			650	-	-	V
I_{DSS}			-	-	10.0	μA
I_{GSS}			-	-	±100	nA
$V_{GS(th)}$			2.4	3.4	4.5	V
$R_{DS(ON)}$			-	156	190	mΩ
R_g			-	4.9	-	Ω
C_{iss}			1084	1517	2049	pF
C_{oss}			28	39	52	pF
C_{rss}			-	5.9	-	pF
Q_g			23	32	43	nC
Q_{gs}			-	10	-	nC
Q_{gd}			-	11	-	nC
$t_{d(on)}$		V_{GS} = 10V, V_{DD} = 310V I_D= 10A, R_{GEN} = 24Ω	-	36	-	ns
t_r			-	38	-	ns
$t_{d(off)}$			-	100	-	ns
t_f	Turn-Off Fall Time		-	30	-	ns
Body Diode Characteristics						
I_S			-	-	15	A
I_{SM}			-	-	61	A
V_{SD}	Body Diode Forward Voltage	V_{GS} = 0V, I_S = 10A	-		1.2	V
trr	Body Diode Reverse Recovery Time	I_F = 10A, di/dt = 100A/us	94	131	177	ns
Qrr	Body Diode Reverse Recovery Charge		-	851	-	nC

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. E_{AS} condition: Starting T_J=25C, V_{DD}=50V, V_{GS}=10V, R_G=25ohm, L=10mH, I_{AS}=3.6A, V_{DD}=0V during time in avalanche.

3. R [illegible]is measured with the device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

4. Pulse Test: Pulse Width V ' X W \ &0.5%.H

Typical Performance Characteristics

Figure 1: Power De-rating

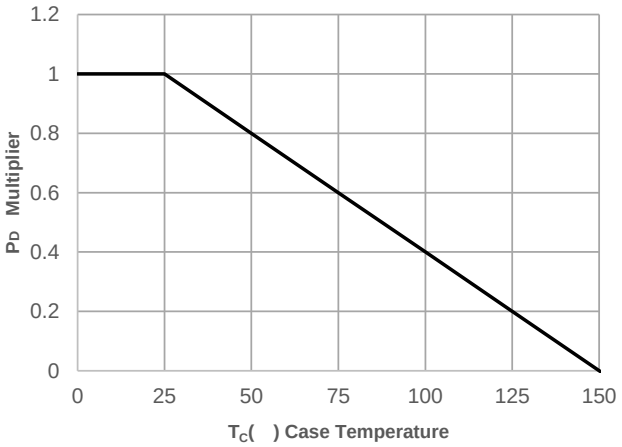
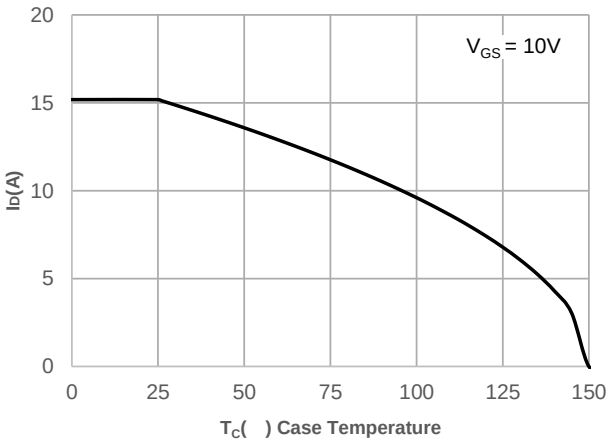
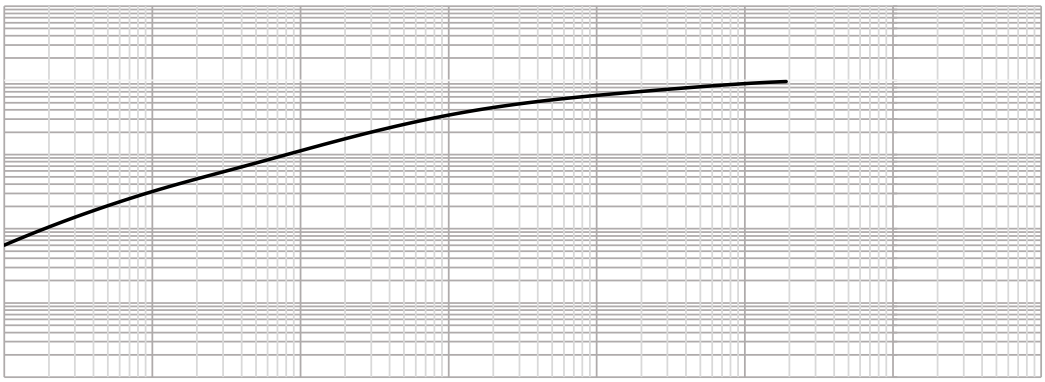


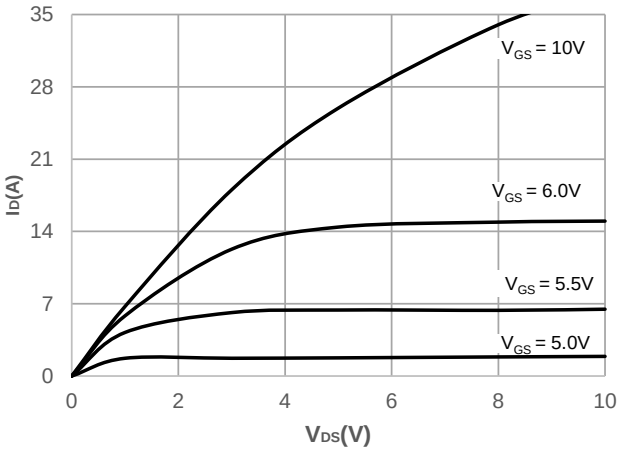
Figure 2: Current De-rating





Typical Performance Characteristics

Figure 5: Output Characteristics



Test Circuit

Figure 1: Gate Charge Test Circuit & Waveform

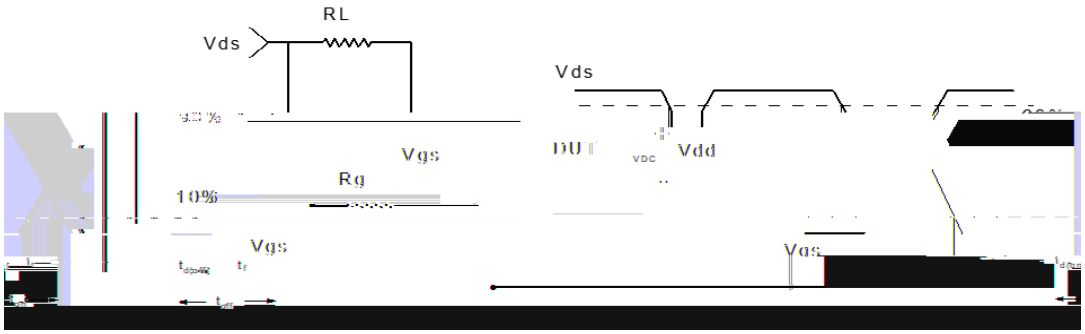


Figure 2: Resistive Switching Test Circuit & Waveform

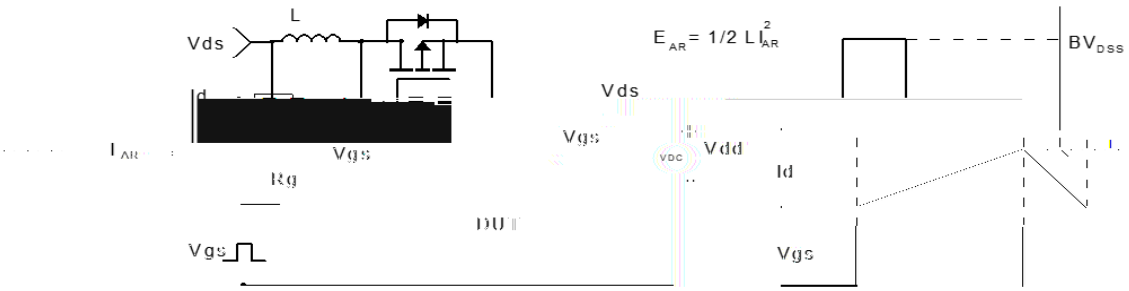


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

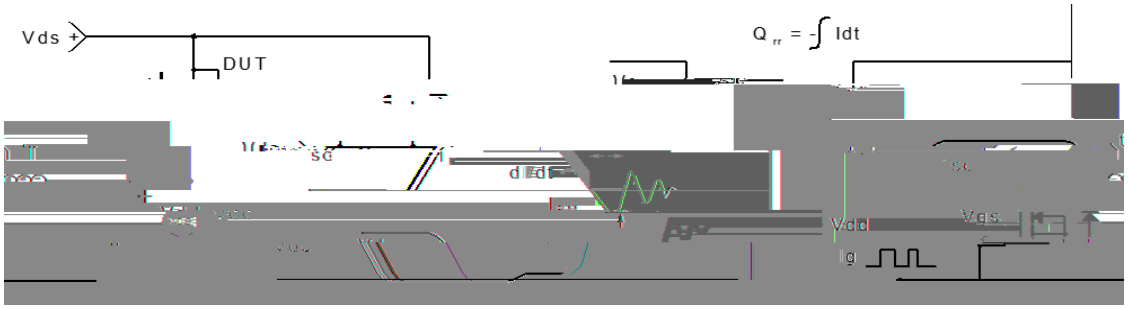


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(TO-220-3L)