

JMH65R190PFFD

Product Summary

Parameters	Value	Unit
V_{DSS}	650	V
$V_{GS(th_Typ)}$	3.6	V
$I_D(@V_{GS}=10V)$	12	A
$R_{DS(ON)_Typ}(@V_{GS}=10V)$	148	m Ω

Ordering Information

Device	Marking	MSL	Form	Package	Tube(pcs)	Per Carton (pcs)
JMH65R190PFFD-U	H65R190PF	N/A	Tube	TO-220FP	50	5000

Absolute Maximum Ratings (@ $T_C = 25^\circ\text{C}$ 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	$T_C = 25^\circ\text{C}$	A
		$T_C = 100^\circ\text{C}$	
I_{DM}	Pulsed Drain Current ⁽¹⁾	Refer to Fig.4	A
E_{AS}	Single Pulsed Avalanche Energy ⁽²⁾	65	mJ
P_D	Power Dissipation	$T_C = 25^\circ\text{C}$	W
		$T_C = 100^\circ\text{C}$	
T_J, T_{STG}	Junction & Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Max	Unit
R	Thermal Resistance, Junction to Ambient ⁽³⁾	58	$^\circ\text{C/W}$
R	Thermal Resistance, Junction to Case	1.8	

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

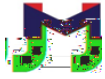
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	I _D = 250μA, V _{GS} = 0V	650	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 650V, V _{GS} = 0V	-	-	10.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{DS} = 0V, V _{GS} = ±30V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D	2.5	3.6	4.6	V
R _{DS(ON)}			-	148	190	mΩ
R _g			-	4.9	-	Ω
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 325V, f = 1MHz	1084	1517	2049	pF
C _{oss}	Output Capacitance		28	39	52	pF
C _{rss}	Reverse Transfer Capacitance		-	5.9	-	pF
Q _g			23	32	43	nC
Q _{gs}			-	10	-	nC
Q _{gd}			-	11	-	nC
t _{d(on)}			-	36	-	ns
t _r			-	38	-	ns
t _{d(off)}			-	100	-	ns
t _f			-	30	-	ns
I _S			-	-	12	A
I _{SM}			-	-	48	A
V _{SD}			-		1.2	V
trr			94	131	177	ns
Qrr			-	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 is measured with the device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

4. Pulse Test: Pulse Width 0.5%.



Typical Performance Characteristics

Figure 1: Power De-rating

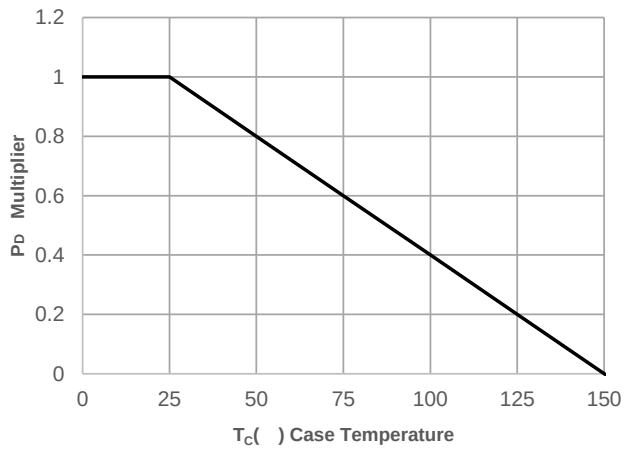
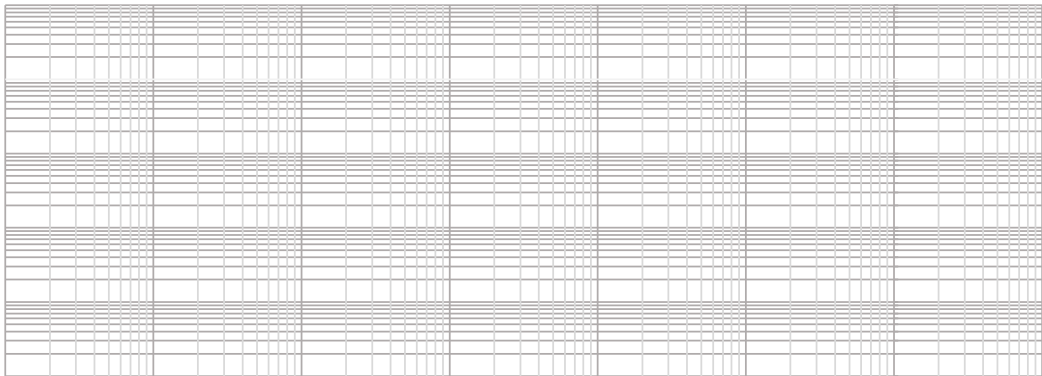
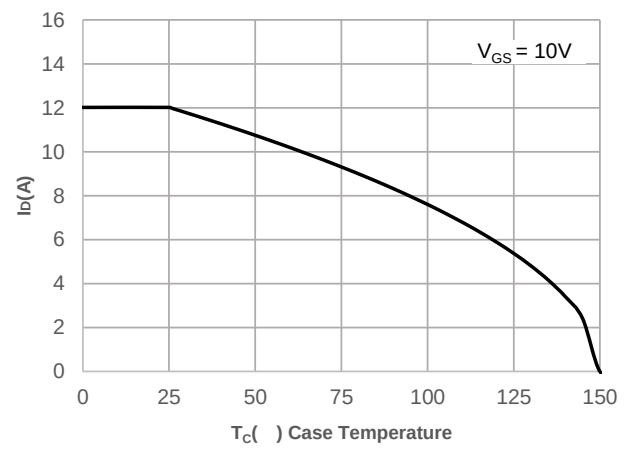
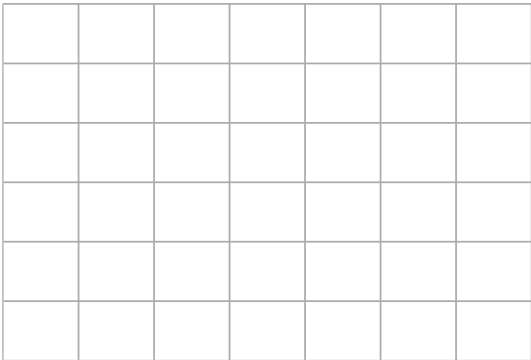
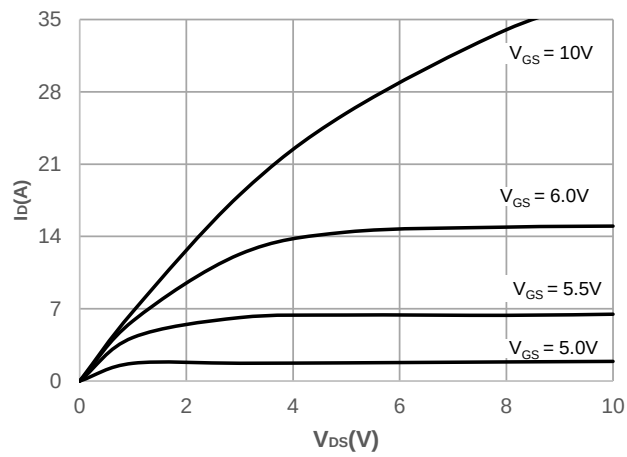


Figure 2: Current De-rating



Typical Performance Characteristics

Figure 5: Output Characteristics



Typical Performance Characteristics

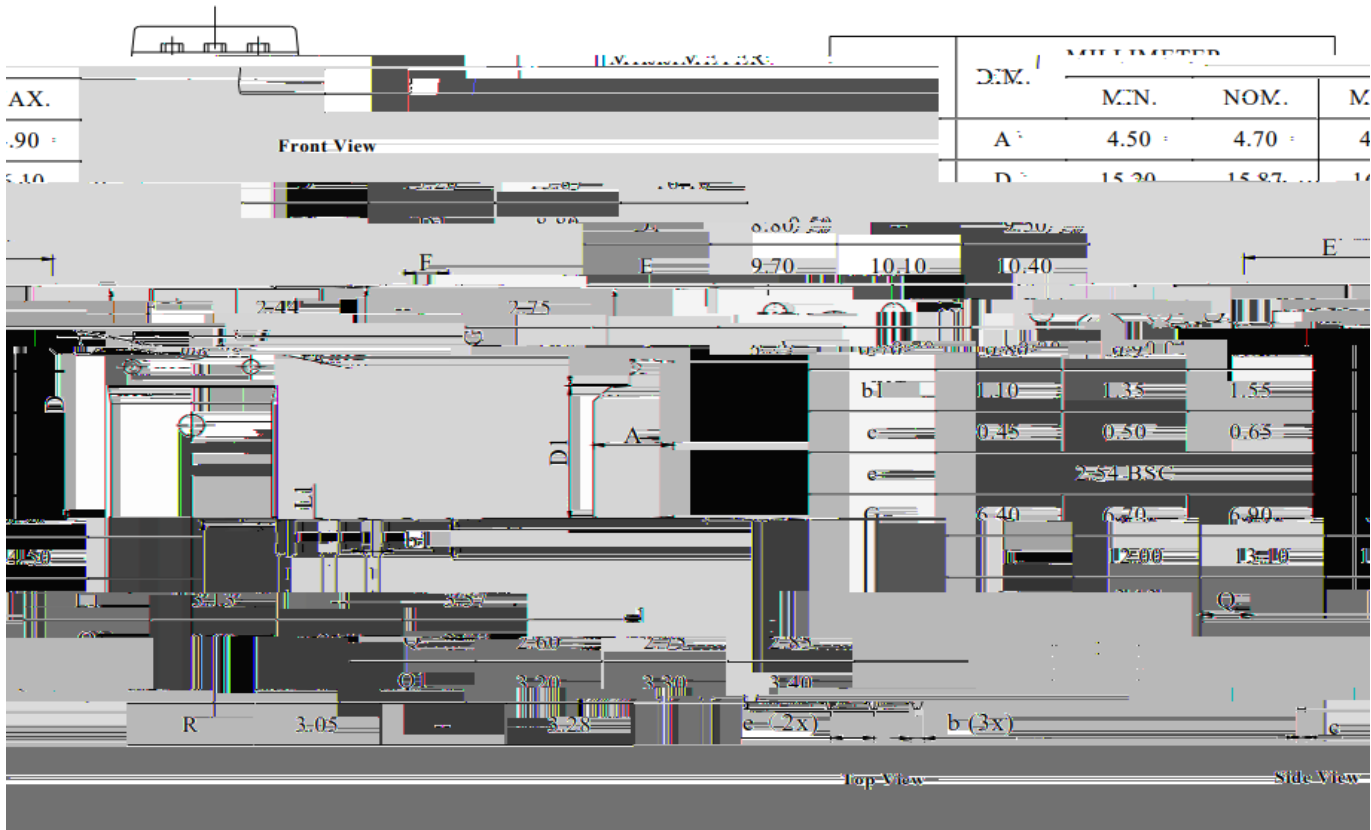
Test Circuit

Figure 1: Gate Charge Test Circuit & Waveform



Package Mechanical Data(TO-220F-3L)

Package Outline



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