

MS10N65

N-Channel Enhancement Mode Power MOSFET

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

Symbol	Parameter	Value	Unit
P _D	Power Dissipation (TC=25°C)	5.5	W
	Power Dissipation (TC=100°C)	0.4	W
T _J /T _{STG}	Operating Junction and Storage Temperature	-55 to +150	°C

NOTE:

1. Repetitive rating; pulse width limited by maximum junction temperature.

Thermal characteristics (Tc=25°C unless otherwise noted)

Symbol	Parameter	Typ.	Max.	Units
R _{θJC}	Typical thermal resistance	--	0.8	°C/W
R _{θJA}		--	62.5	

Static Characteristics

Symbol	Test Conditions	Min	Typ.	Max.	Units
V _{GS}	V _{DS} = V _{GS} , I _D = 250μA	2.0		4.0	V
*R _{DS(ON)}	V _{GS} = 10 V, I _D = 4.75 A	--	0.7	0.85	mΩ
BV _{DSS}	V _{GS} = 0 V, I _D = 250μA	650	710	--	V
ΔBV _{DSS} /ΔT _J	I _D = 250μA, Referenced to 25°C		0.6		
I _{DSS}	V _{DS} = 650 V, V _{GS} = 0 V V _{DS} = 520 V, V _{GS} = 0 V, T _J = 125°C	--	--	10 100	uA
G _{FS}	V _{DS} = 30 V, V _{GS} = 0 V			100	S
I _{GSS}	V _{DS} = -30 V, V _{GS} = 0 V	--	--	-100	nA

Switching Characteristics

Symbol	Test Conditions	Min	Typ.	Max.	Units
Q _g	V _{DS} = 520 V, I _D = 10 A, V _{GS} = 10 V	--	30	40	nC
Q _{gs}		--	5	--	
Q _{gd}		--	14	--	
t _{d(on)}	V _{DS} = 325 V, I _D = 10 A, R _G = 25 Ω	--	20	40	ns
t _r		--	30	60	ns
t _{d(off)}		--	90	180	ns
t _f		--	40	80	ns
C _{ISS}	V _{DS} = 25 V, V _{GS} = 0 V, f = 1.0MHz	--	1210	1580	pF
C _{OSS}		--	145	190	pF
C _{RSS}		--	16	20	pF

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Source-Drain Diode Characteristics

Symbol	Test Conditions	Min	Typ.	Max.	Units
I_S		--	--	9.5	A
I_{SM}		--	--	38	
V_{SD}	$I_F = 10\text{ A}$, $V_{GS} = 0\text{ V}$	--	--	1.5	V
t_{rr}	$I_F = 10\text{ A}$, $V_{GS} = 0\text{ V}$, $dI_F/dt=100\text{A}/\mu\text{s}$	--	450	--	ns
Q_{rr}		--	4.2	--	uC

Notes:

1. Repeativity rating : pulse width limited by junction temperature
2. $I_{AS}=10\text{A}$, $V_{DD}=50\text{V}$, $R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$
3. $I_{SD}\leq 10\text{A}$, $di/dt\leq 300\text{A}/\mu\text{s}$, $V_{DD}\leq BVDSS$, Starting $T_J=25^\circ\text{C}$
4. Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$
5. Essentially independent of operating temperature.

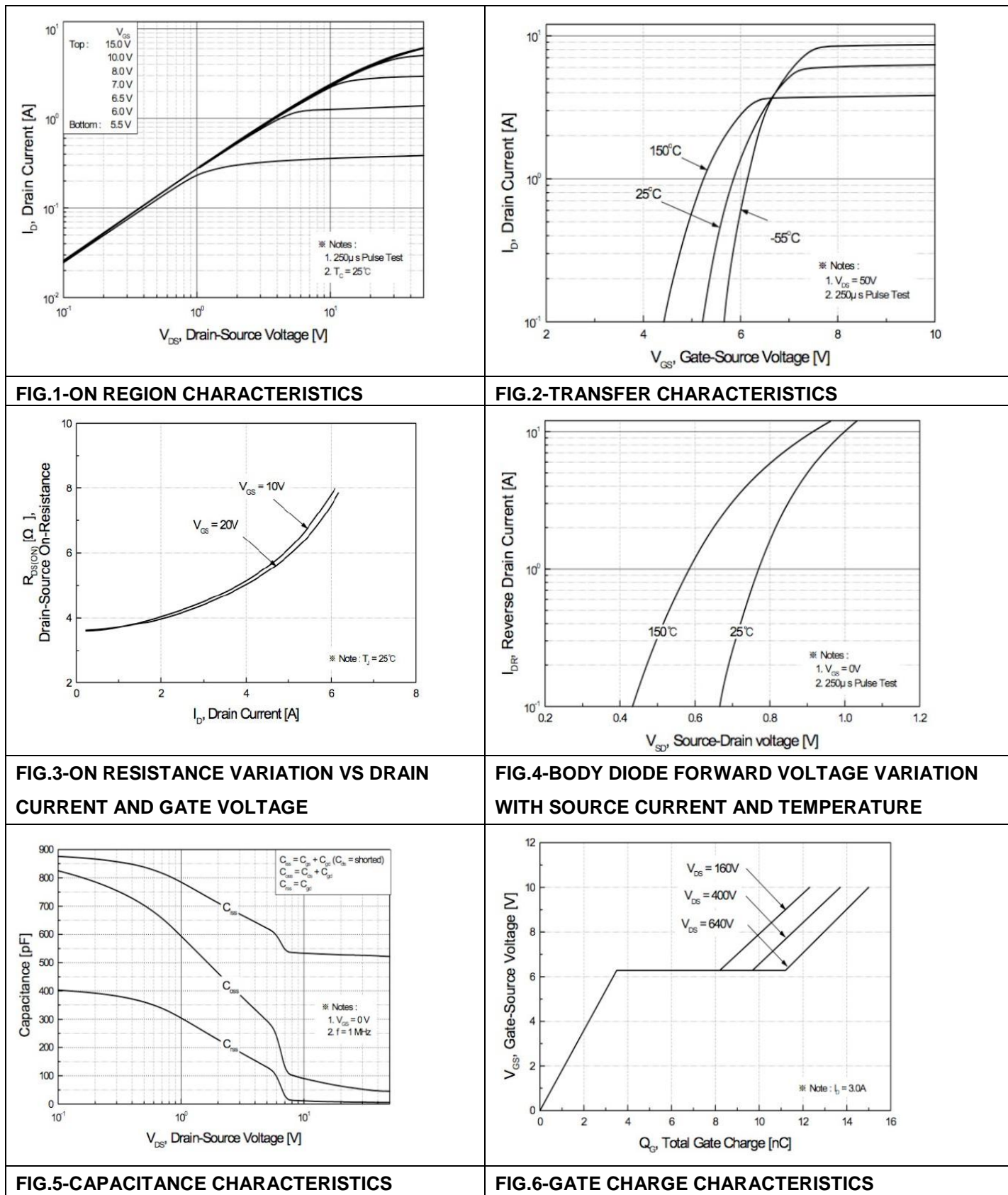
Ordering Information

Package	Shipping
TO-220	50 pcs/tube

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■Characteristics Curve



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■ Characteristics Curve

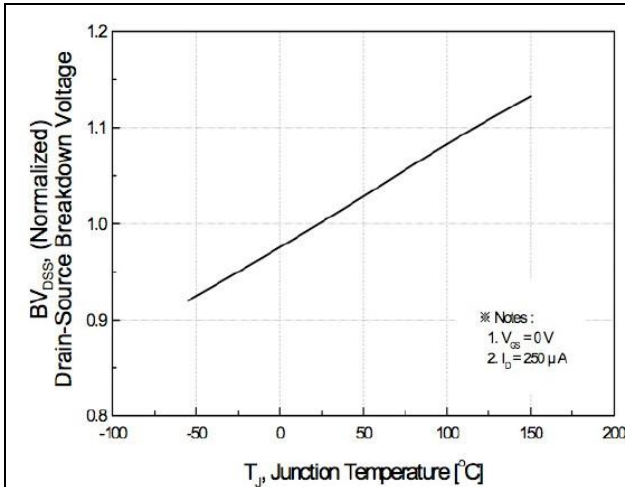


FIG.7-BREAKDOWN VOLTAGE VARIATION VS TEMPERATURE

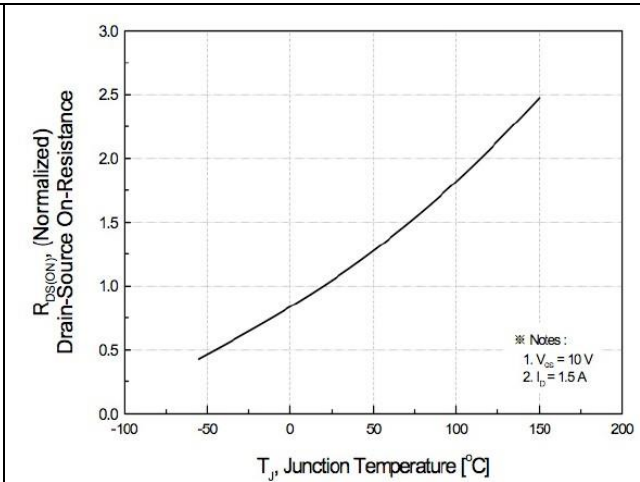


FIG.8-ON-RESISTANCE VARIATION VS TEMPERATURE

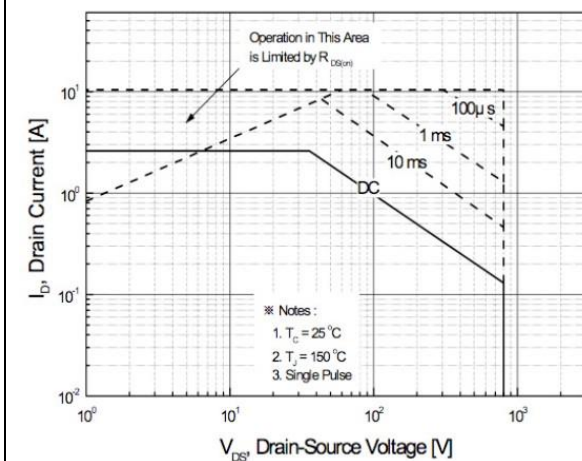


FIG.9-MAXIMUM SAFE OPERATING AREA

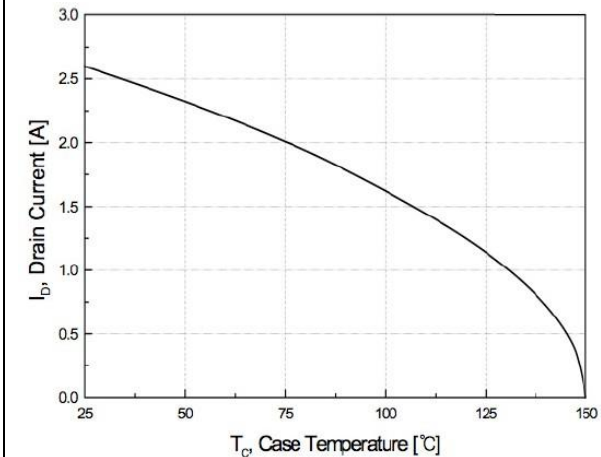


FIG.10-MAXIMUM DRAIN CURRENT VS CASE TEMPERATURE

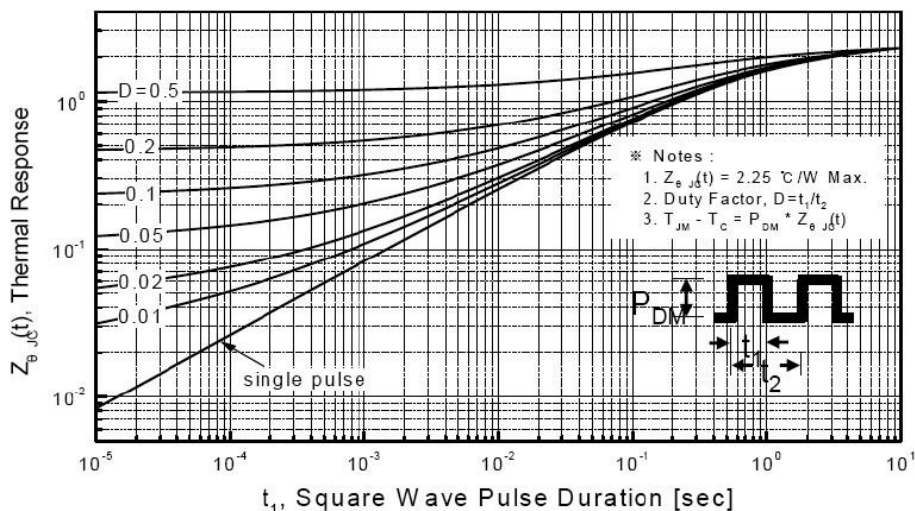


FIG.11-TRANSIENT THERMAL RESPONSE CURVE

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