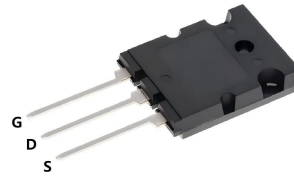


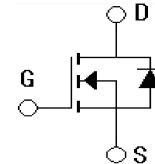
Features

- $V_{DS}=1000V, I_D=55A$
 $R_{DS(on)} < 0.28\Omega$
- avalanche tested and current rated
- Fast intrinsic Rectifier



Applications

- High power density
- Easy to mount
- Space savings



Absolute Ratings ($T_c=25^\circ\text{C}$)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	1000	V
Transient Gate-Source Voltage	V_{GSS}	± 30	V
Continuous Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current-continuous	I_D	55	A
Drain Current-pulse (1)	I_{DM}	110	A
Avalanche current	I_{AR}	15	A
Single Pulsed Avalanche Energy (2)	E_{AS}	2368	mJ
Maximum Power Dissipation	P_D	1042	W
Operating Temperature Range	T_J	$-40 \sim +150$	$^\circ\text{C}$
Storage Temperature Rang	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$
Maximum lead temperature for soldering purposes	T_L	300	$^\circ\text{C}$
Minimum isolation voltage for case to terminal	V_{ISO}	3.0	KV

Electrical Characteristics($T_{CASE}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=3mA, V_{GS}=0V$	1000	-	-	V

Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	3.0	-	5.0	V
Static Drain-Source On-Resistance(3)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=10A$	-	211	280	m Ω
Forward Transconductance	g_{fs}	$V_{DS}=10V, I_D=10A$ (note3)	-	16	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$	-	8442	-	pF
Output capacitance	C_{oss}		-	758	-	pF
Reverse transfer capacitance	C_{rss}		-	27	-	pF

Electrical Characteristics($T_{CASE}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	t _{d(on)}	V _{DS} =500V, I _D =27A, R _g =25Ω, V _{GS} =10V (note3,4)	-	45	-	ns
Turn-On rise time	t _r		-	25	-	ns
Turn-Off delay time	t _{d(Off)}		-	120	-	ns
Turn-Off rise time	t _f		-	18	-	ns
Total Gate Charge	Q _g	V _{DS} =500V, I _D =27A, V _{GS} =10V (note3,4)	-	200	-	nC
Gate-Source charge	Q _{gs}		-	42	-	nC
Gate-Drain charge	Q _{gd}		-	114	-	nC
Drain-Source Diode Characteristics						
Continuous Drain-Source Diode Forward Current	V _{SD}	V _{GS} =0V, I _S =1A	-	0.65	1.2	V
Diode Forward Current	I _S	T _C =25℃	-	-	55	A
Reverse recovery time	T _{rr}	I _S =27A, -dI _F /dt=100A/μs V _R =100V, V _{GS} =0V	-	0.3	-	us
Reverse Recovery Charge	Q _{rr}		-	8.2	-	uC
Reverse recovery current	I _{RR}		-	16.5	-	A

Thermal Characteristics

Parameter	Symbol	Max	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.12	°C/W
Case to Sink Thermal Resistance, junction-Ambient	$R_{th(C-A)}$	32.5	

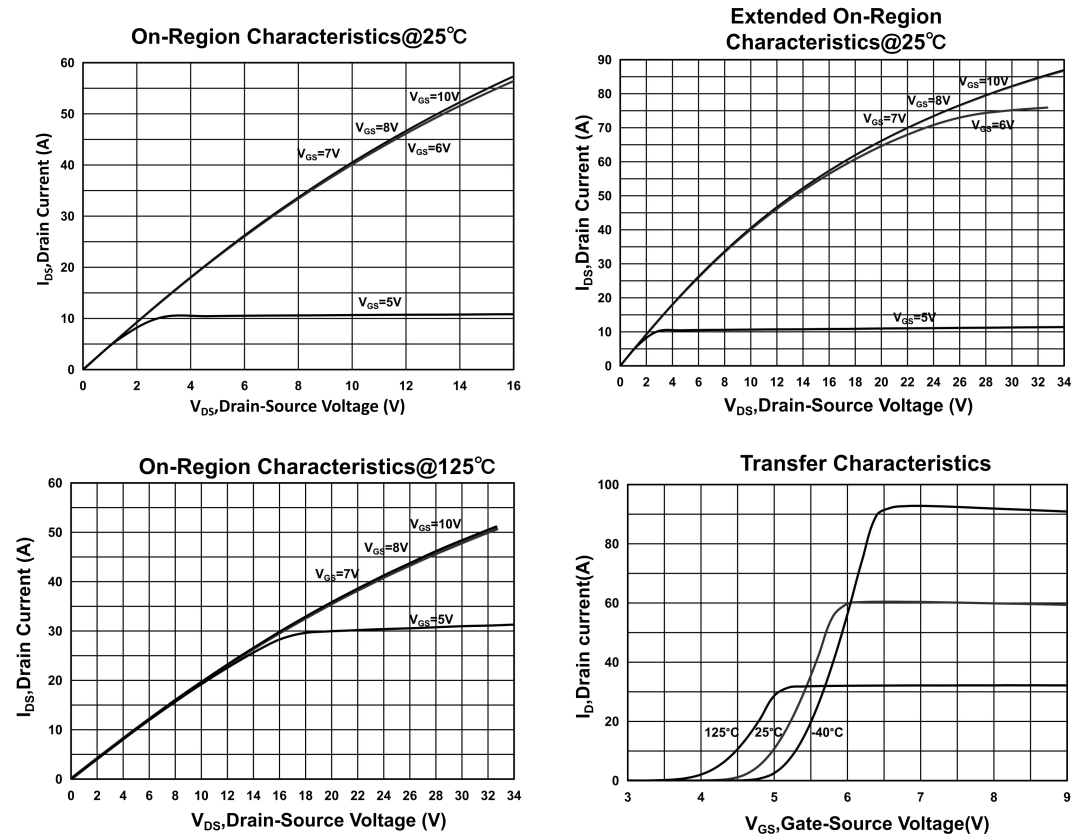
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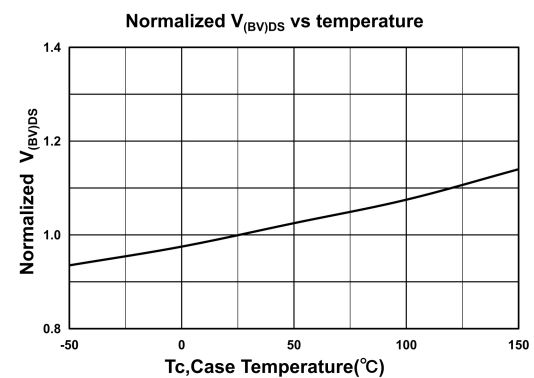
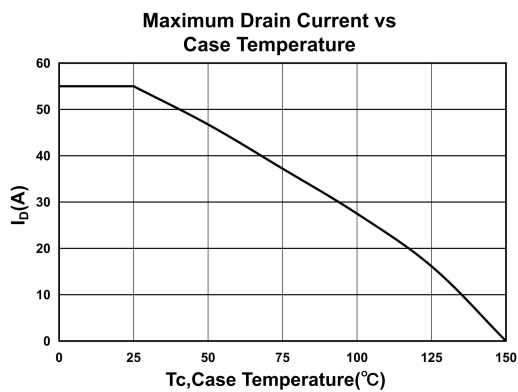
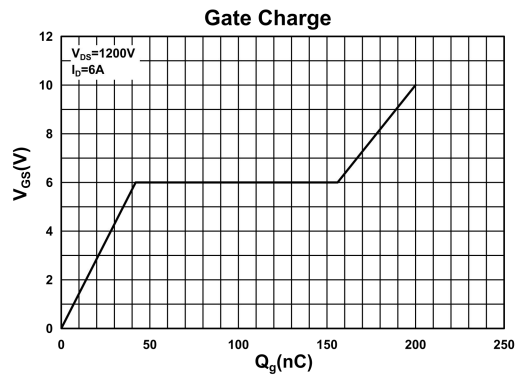
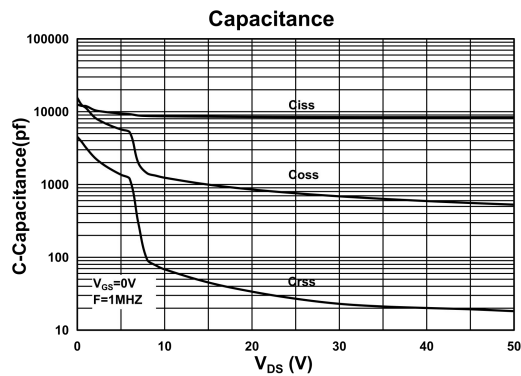
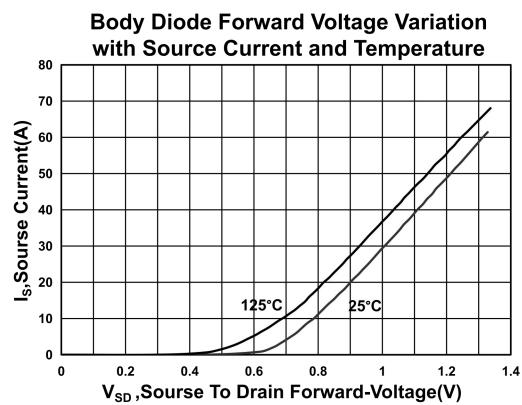
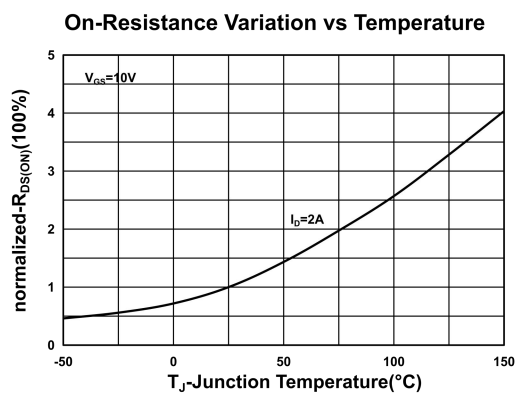
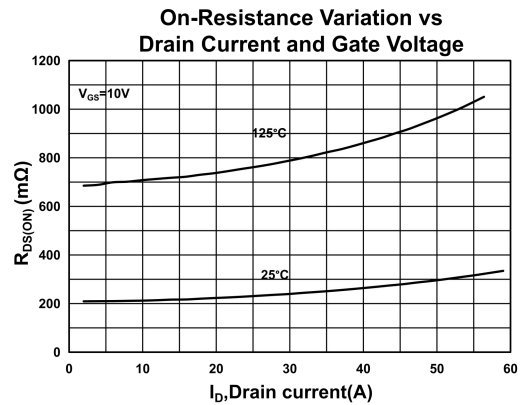
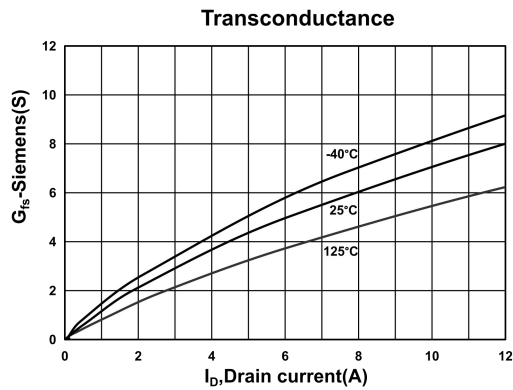
Marking	Package
MS55N100HGB3	TO-264

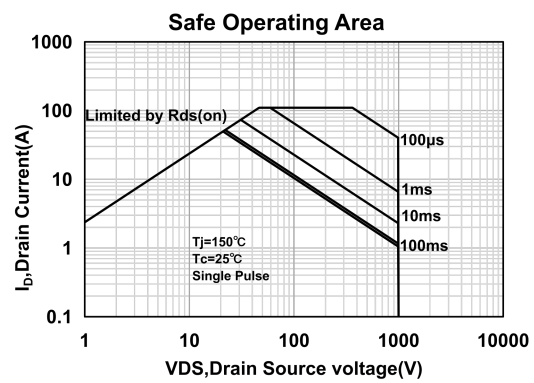
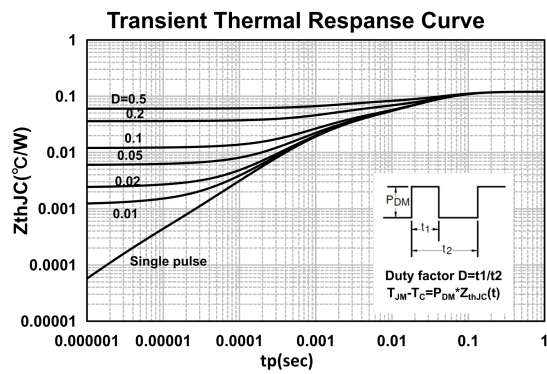
Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. $L = 20 \text{ mH}$, $I_{AS} = I_{AR}$, $V_{DD} = 50V$, $R_G = 25 \Omega$, Starting $T_J = 25^\circ\text{C}$
3. Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$
4. Essentially independent of operating temperature

Electrical Characteristics







Package Mechanical DATA

