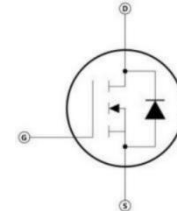
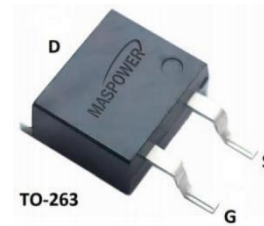


Features

- 100% avalanche tested
- Fast Intrinsic Diode
- Gate charge minimized
- Very low intrinsic capacitances
- High speed switching



Applications

- High Voltage Power Supplies
- PV Inverter
- Switching applications

Electrical ratings

Absolute maximum ratings			
Parameter	Symbol	Value	Unit
Drain-source voltage ($V_{GS} = 0$)	V_{DS}	3500	V
Gate- source voltage	V_{GS}	± 20	
Drain current (continuous) at $T_C = 25\text{ }^{\circ}\text{C}$	I_D	0.5	A
Drain current (continuous) at $T_C = 100\text{ }^{\circ}\text{C}$		0.3	
Drain current (pulsed)	I_{DM}	3	
Total dissipation at $T_C = 25\text{ }^{\circ}\text{C}$	P_D	200	W
Continuous Pulse Avalanche Current	I_{AR}	0.26	A
Single pulse avalanche energy (starting $T_J = 25\text{ }^{\circ}\text{C}$, $I_D = I_{AR}$, $V_{DD} = 50\text{ V}$)	E_{AS}	675	μJ
Operating junction temperature	T_J	-55 ~ 150	$^{\circ}\text{C}$
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	300	$^{\circ}\text{C}$

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

On /off states						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 250\text{ }\mu\text{A}$, $V_{GS} = 0$	3500			V
Zero gate voltage drain current ($V_{GS} = 0$)	I_{DSS}	$V_{DS} = \text{Max rating}$ $V_{DS} = \text{Max rating}$, $T_C = 125\text{ }^{\circ}\text{C}$			100 1000	μA
Gate-body leakage current ($V_{DS} = 0$)	I_{GSS}	$V_{GS} = \pm 20\text{ V}$			± 100	nA

Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	4.8		6.5	V
Static drain-source on resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 0.5A	-	40	45	Ω
Dynamic						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward trans-conductance	g _{fs}	V _{DS} = 15 V, I _D = 0.25A		200		mS
Input capacitance	C _{iss}	V _{DS} =25V ,f= 1MHz,V _{GS} =0		230		pF
Output capacitance	C _{oss}			17		
Reverse transfer capacitance	C _{rss}			7		
Total gate charge	Q _g	V _{DS} =1750V, I _D =0.5mA V _{GS} =10V		8.0		nC
Gate-source charge	Q _{gs}			0.8		
Gate-drain charge	Q _{gd}			5.4		
Switching times						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Turn-on delay time	t _{d(on)}	Resistive load V _{DD} = 1750 V, I _D =0.25A, R _G = 4.7 Ω, V _{GS} = 10 V		18		ns
Rise time	t _r			15		
Turn-off-delay time	t _{d(off)}			36		
Fall time	t _f			38		
Source drain diode						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Source-drain current	I _{SD}				0.5	A
Source-drain current (pulsed)	I _{SDM}				2	
Forward on voltage	V _{SD}	I _{SD} = 0.5A, V _{GS} = 0			1.5	V
Reverse recovery time	t _{rr}	I _{SD} =0.5A , di/dt=50A/ μs V _{DD} = 100 V		1300		ns
Reverse recovery charge	Q _{rr}			9		μC
Reverse recovery current	I _{RRM}			0.35		A
Reverse recovery time	t _{rr}	I _{SD} =0.5A , di/dt=100A/ μs V _{DD} = 60V T _J = 150 °C		1200		ns
Reverse recovery charge	Q _{rr}			8.5		μC
Reverse recovery current	I _{RRM}			0.25		A

Thermal data			
Parameter	Symbol	Value	Unit
Thermal resistance junction-case max	$R_{thj-case}$	0.62	W/°C
Thermal resistance junction-ambient max	$R_{thj-amb}$	50	

Order Informations

Order Code	marking	packaging
MS05N350HGE0	TO-263	Tube

Electrical characteristics

Fig.1 On-Region Characteristic@25°C

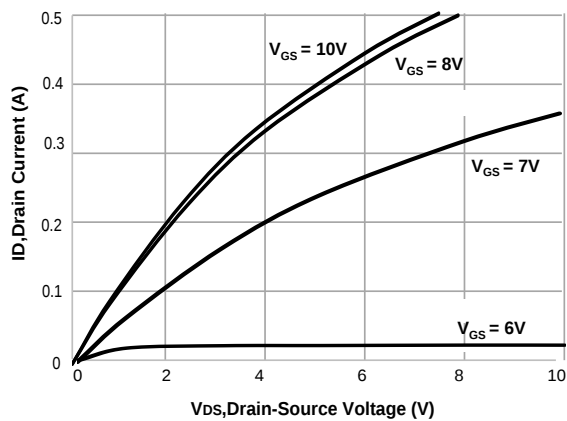


Fig.2 Extended On-Region Characteristic@25°C

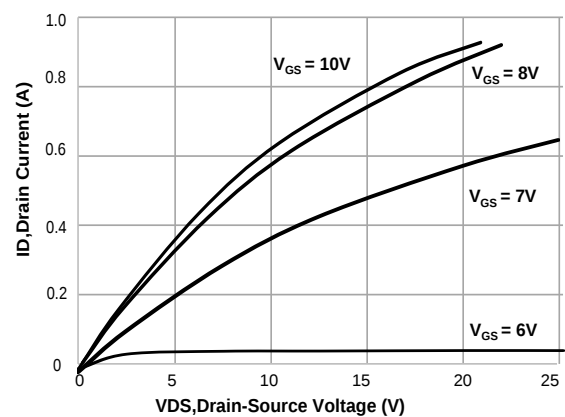


Fig.3 On-Region Characteristic@125°C

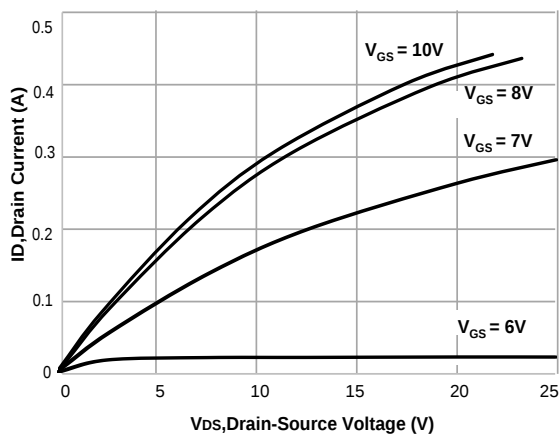


Fig.4 Normalization On-Resistance Variation vs Junction Temperature

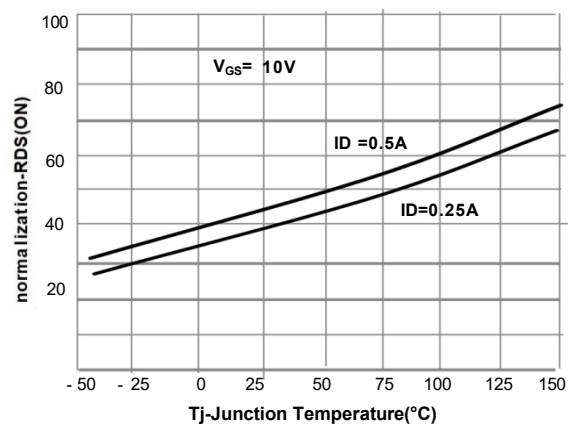


Fig.5 On.Resistance vs. Drain Current

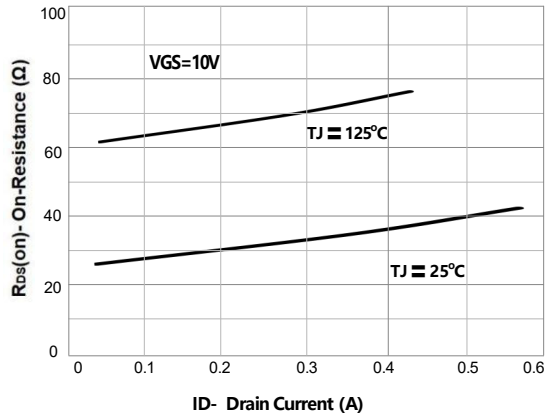


Fig.6 Drain Current vs. Case Temperature

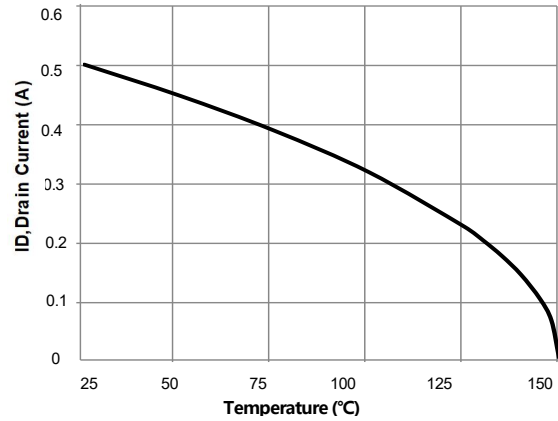


Fig.7 Transfer Characteristics

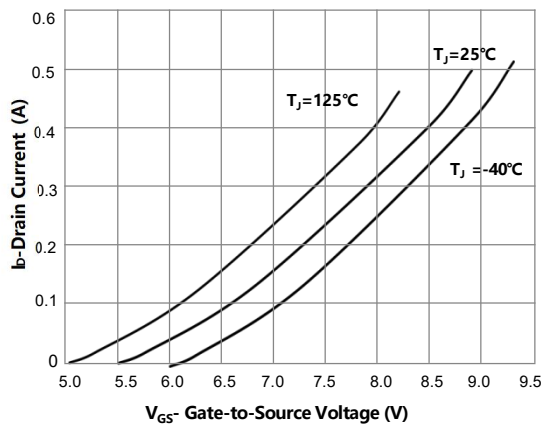


Fig.8 Source.Drain Diode Forward Voltage

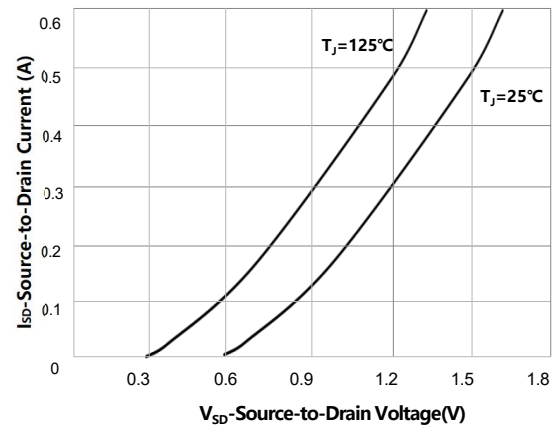


Fig.9 Gate.Charge Characteristics

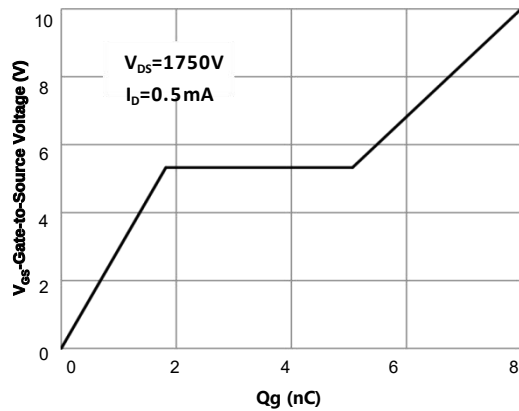


Fig.10 Capacitance vs. Drain.Source Voltage

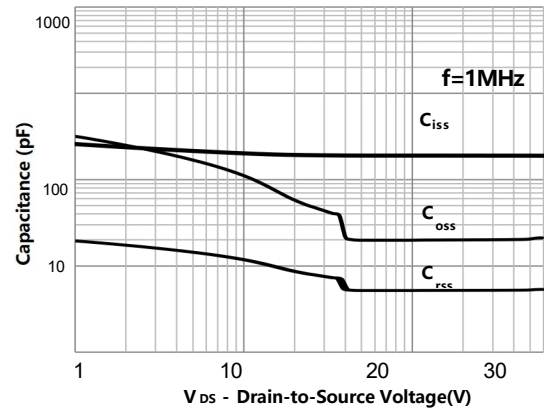


Fig.11 Power De-rating

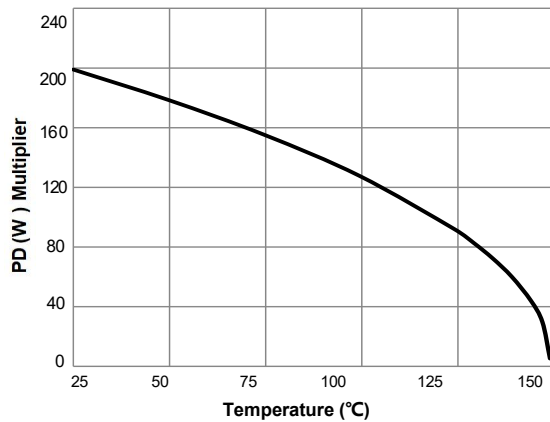


Fig. 12 Transconductance

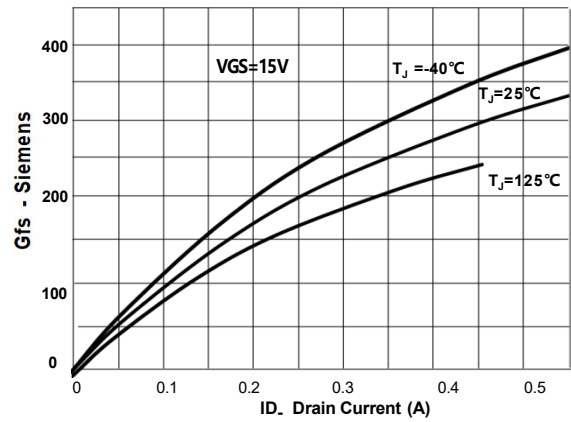


Fig.13 Safe Operating Area

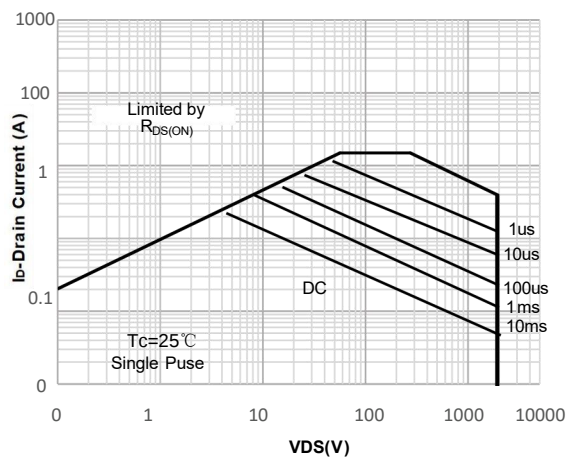
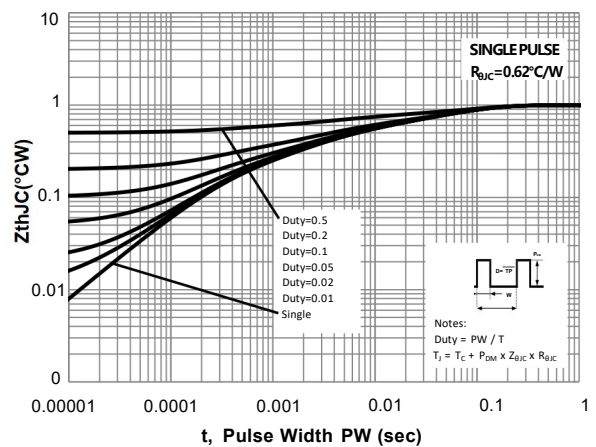
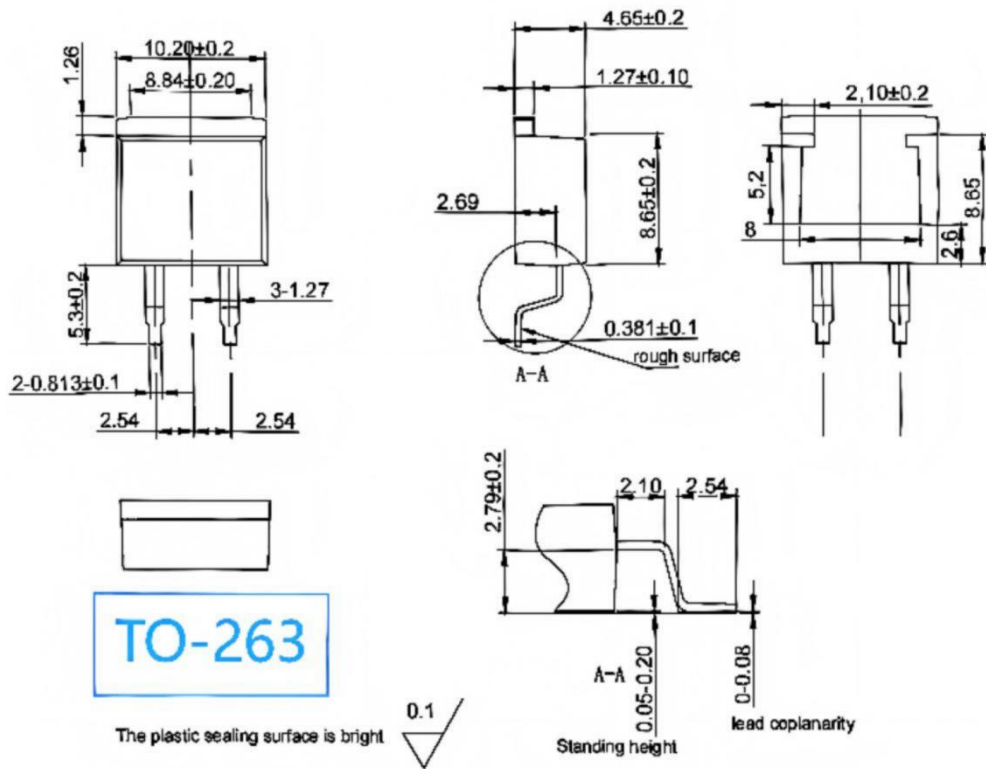


Fig.14 Transient Thermal Response Curve



Package outline dimension



Notes:

1. unmarked tolerance ± 0.15 mm; unmarked $R < 0.15$ mm
2. The resin body is not allowed to have defects, shrinkage holes, cracks, bubbles and other harmful defects
3. The drawing indicates that the leg has reinforcement
4. The top pinhole is not allowed to protrude the surface of the plastic sealing body
5. Unit: mm