

GP120R150T6

N-channel 1200V 10A GaN Power HEMT in TO263-5 Package

Preliminary Datasheet version: 1.0

Features

BV_{dss}	R_{dson}	I_{ds}	V_{GS}	$V_{GS(TH)}$
1200V	150mΩ	10A	-3V to 15V	4.0 V

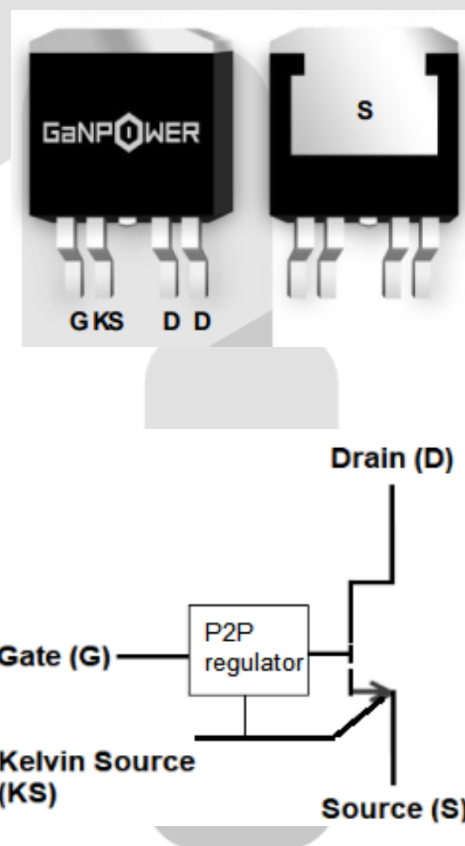
- Ultra-low R_{dson}
- High dv/dt capability
- Extremely low input capacitance
- Zero Qrr
- Outstanding switching performance
- Low Profile
- Upgraded P2P GaN with input regulator IC to match input lead and voltage of existing SiC MOSFET

Applications

- Switching Power Applications
- Server and Telecom Power Application
- EV OBC and DC-DC Converters UPS, Inverters, PV

Description

These devices are N-channel 1200V Power GaN HEMTs based on proprietary E-mode GaN on silicon technology, integrating an input regulator circuit to match input lead and voltage of existing SiC MOSFET in a pin-to-pin (P2P) fashion. The resulting product has extremely low on-state resistance, very low input capacitance and zero reverse recovery charge, making it especially suitable for applications which require superior power density, ultra-high switching frequency and outstanding efficiency.





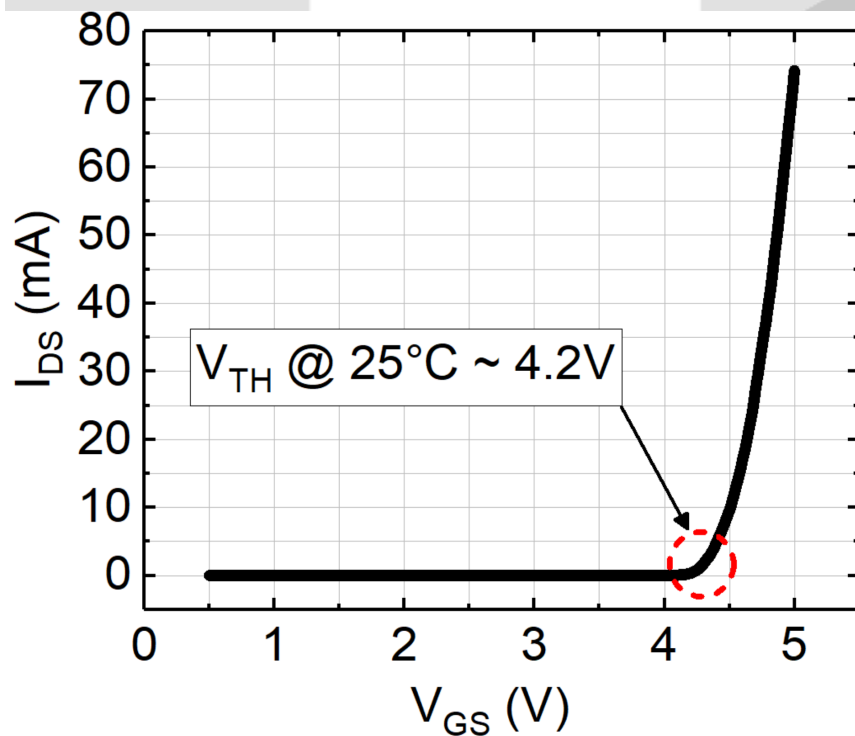
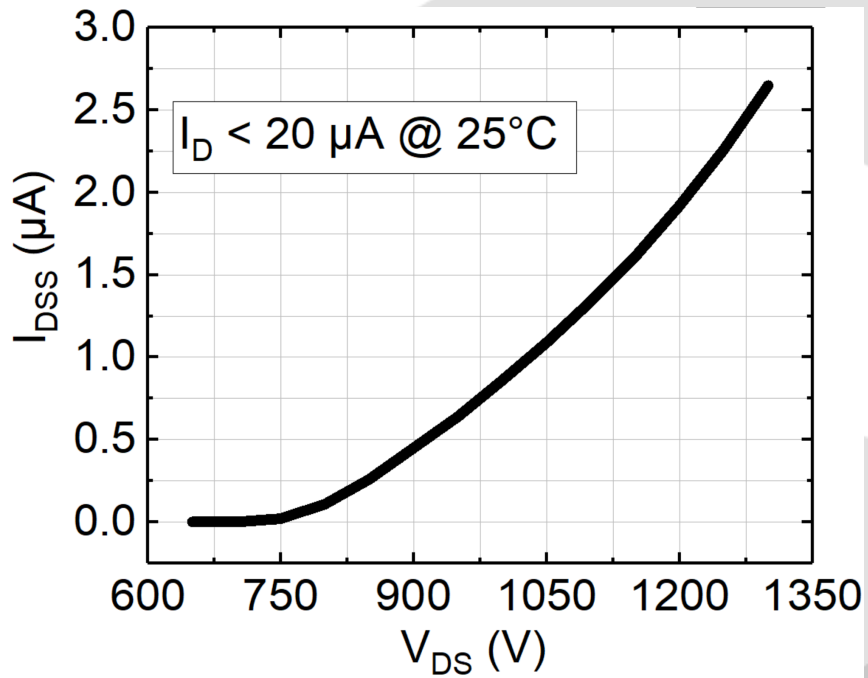
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Device Characteristics

Basic Parameters				Test data			
	Parameters		Conditions	Min	Typical	Max	Unit
1	$V_{GS(TH)}$	Zero gate voltage drain current, $T_c = 25^\circ\text{C}$	$V_{DS} = V_{GS}$ $I_D = 3\text{mA}$	3.7	4.0	4.2	V
2	BV_{DSS}	Drain-Source breakdown voltage	$V_{GS} = 0\text{V}$ $I_D < 20\mu\text{A}$		1200		V
3	I_{DSS}	Zero gate voltage drain current, $T_c = 25^\circ\text{C}$	$V_{GS} = 0\text{V}$ $V_{DS} = 1200\text{V}$		1.5	2.0	μA
4	I_{GSS}	Gate-Source Leakage @ 25°C	$V_{GS} = 12\text{V}$ $V_{DS} = 0\text{V}$		10	20	mA
5	$R_{DS(on)}$	Static drain-source on resistance, $T_c = 25^\circ\text{C}$	$V_{GS} = 12\text{V}$		150	200	m Ω
Switching Performance				Test data			
	Parameters		Conditions	Min	Typical	Max	Unit
1	$t_{D(ON)}$	Turn-on delay time	$V_{DS} = 800\text{V}$ $I_D = 4.7\text{A}$ $V_{GS} = +12\text{V}/-1\text{V}$ $R_{GON} = 2\Omega$ $R_{GOFF} = 0\Omega$		28		ns
2	t_R	Rise time			94		ns
3	$t_{D(OFF)}$	Turn-off delay time			15		ns
4	t_F	Fall time			22		ns
5	E_{ON}	Switching energy during turn-on			203.8		μJ
6	E_{OFF}	Switching energy during turn-off			11.2		μJ

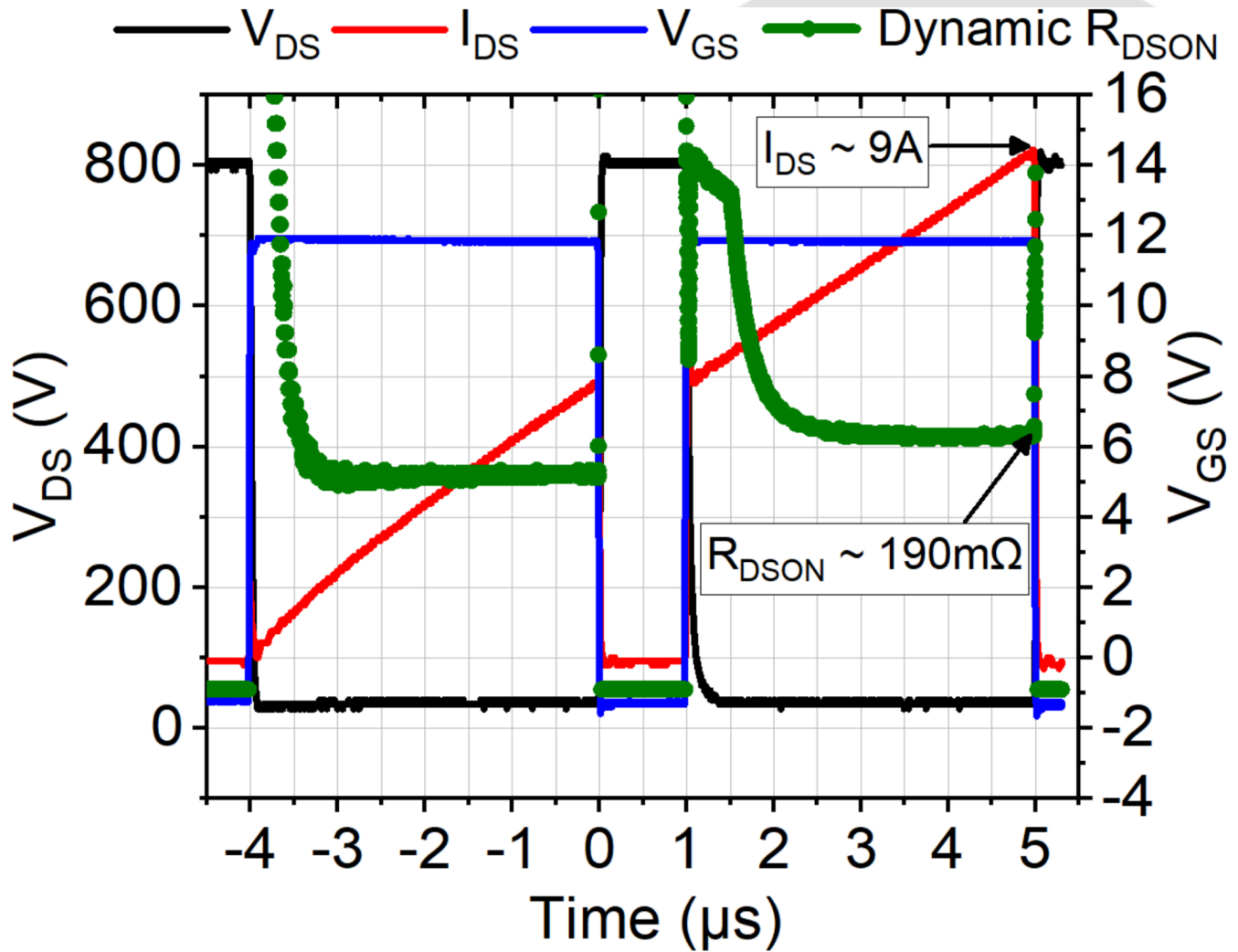
Electrical Performance





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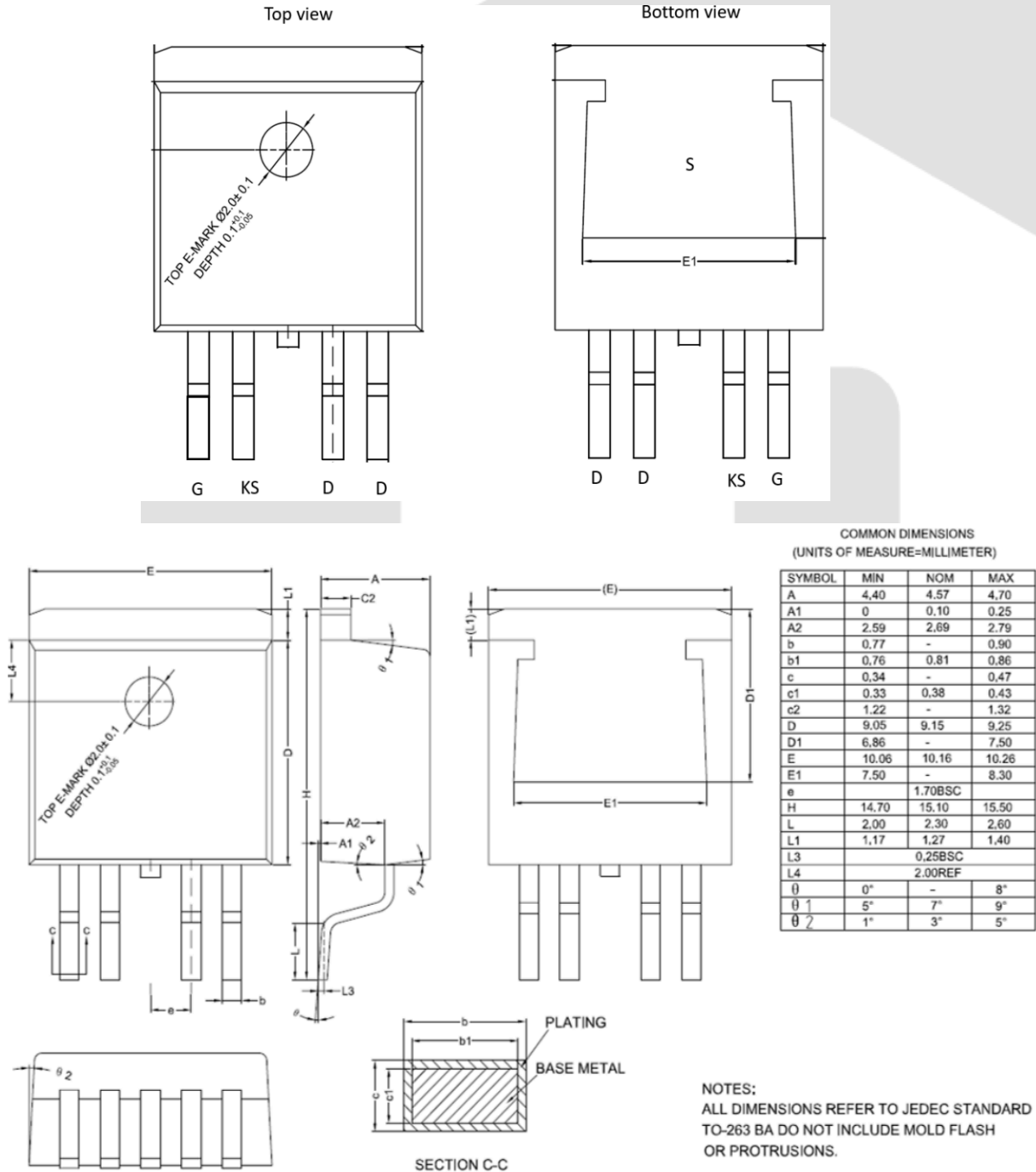
DPT @ 25°C: $V_{BUS} = 800\text{V}$, L-load = 360 μH



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Package Information



For more information, visit us at: www.iganpower.com, or contact us at sales@iganpower.com



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Further Information

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Data Source – Data here are based on recent tests but all parameters may not be up to date. Actual final test data from packaging production are available for selected customers upon request.