

1200V, 3.2mΩ SiC Module

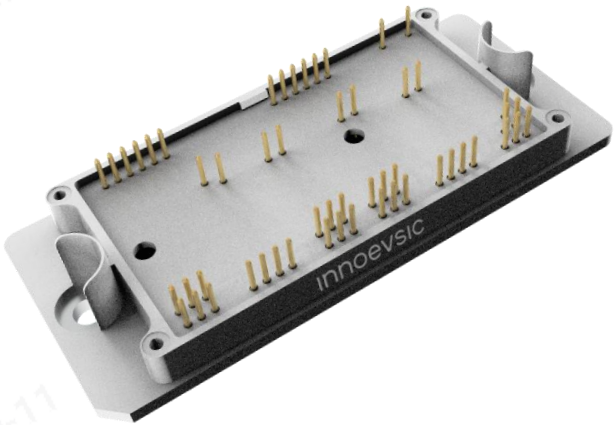
Features

- High Blocking Voltage
- High Frequency Operation
- Low on-resistance
- Neutral Point Clamped Topology (I-Type)
- High speed and smooth switching
- Base isolation: Si₃N₄
- Cu baseplate

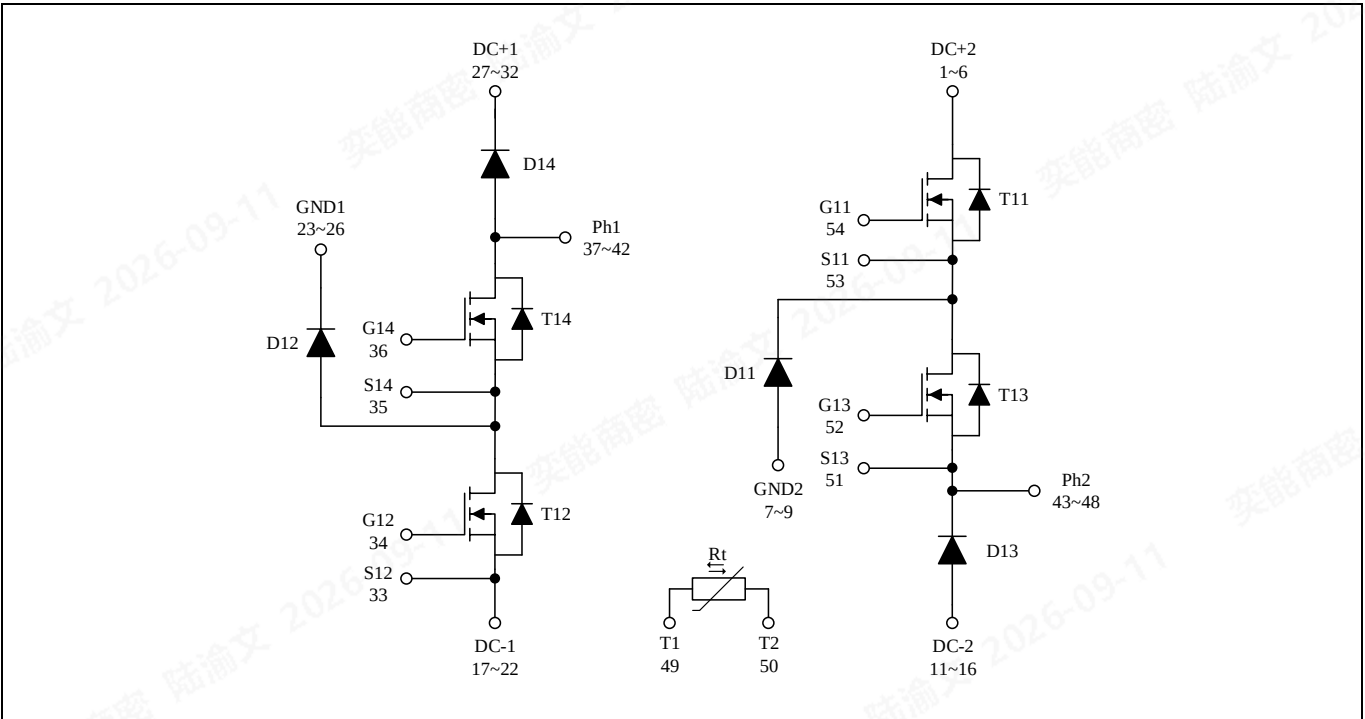
Typical applications

- UPS
- Solar Inverters
- Energy Storage Systems
- AC/DC Converters
- Three-level applications

V_{DS}	1200V
$R_{DS(on)}$	3.2mΩ



Circuit diagram



Identification				
I _D	Component	Voltage	Current	Function
T11, T12	MOSFET	1200V	310A	Buck Switch
T13, T14	MOSFET	1200V	310A	Boost Switch
D11, D12	SBD	1200V	250A	Buck Switch
D13, D14	SBD	1200V	250A	Boost Switch
Rt	Thermistor			Thermistor

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1 Maximum ratings

$T_j = 25^{\circ}\text{C}$, unless otherwise specified.

1.1 Buck switch

Table 1 Buck switch

Parameter	Symbol	Note or test condition	Value	Unit
Drain-source voltage	V_{DS}		1200	V
Drain current (DC current)	I_D	$T_j = T_{jmax}, T_s = 80^{\circ}\text{C}$	310	A
Repetitive peak Drain current	I_{CRM}	t_p limited by T_{jmax}	620	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}, T_s = 80^{\circ}\text{C}$	620	W
Gate-source voltage	$V_{GS, max}$		22/-10	V
Gate-source voltage	V_{GSop}		18/-5	V
Maximum junction temperature	T_{jmax}		175	$^{\circ}\text{C}$

1.2 Buck diode

Table 2 Buck diode

Parameter	Symbol	Note or test condition	Value	Unit
Peak repetitive reverse voltage	V_{RRM}		1200	V
Forward current (DC current)	I_F	$T_j = T_{jmax}, T_s = 80^{\circ}\text{C}$	250	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	500	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}, T_s = 80^{\circ}\text{C}$	568	W
Maximum junction temperature	T_{jmax}		175	$^{\circ}\text{C}$

1.3 Boost switch

Table 3 Boost switch

Parameter	Symbol	Note or test condition	Value	Unit
Drain-source voltage	V_{DS}		1200	V
Drain current (DC current)	I_D	$T_j = T_{jmax}, T_S = 80^{\circ}C$	310	A
Repetitive peak Drain current	I_{CRM}	t_p limited by T_{jmax}	620	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}, T_S = 80^{\circ}C$	620	W
Gate-source voltage	V_{GS}		22/-10	V
Gate-source voltage	V_{GSop}		18/-5	V
Maximum junction temperature	T_{jmax}		175	$^{\circ}C$

1.4 Boost diode

Table 4 Boost diode

Parameter	Symbol	Note or test condition	Value	Unit
Peak repetitive reverse voltage	V_{RRM}		1200	V
Forward current (DC current)	I_F	$T_j = T_{jmax}, T_S = 80^{\circ}C$	250	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	500	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}, T_S = 80^{\circ}C$	568	W
Maximum junction temperature	T_{jmax}		175	$^{\circ}C$

2 Characteristic values

1.5 Module properties

Table 5 Thermal properties

Parameter	Symbol	Note or test condition	Value	Unit
Storage temperature	T_{stg}		-40...+125	°C
Operation temperature under switching condition	T_{jop}		-40...+175	°C

Table 6 Isolation properties

Parameter	Symbol	Note or test condition	Value	Unit
Isolation voltage	V_{isol}	DC Test Voltage* $t_p = 2s$	4200	V
Isolation voltage	V_{isol}	AC Voltage $t_p = 1min$	3000	V
Creepage distance			>12.7	mm
Clearance			>12.7	mm
Comparative Tracking Index	CTI		≥200	

* 100% tested in production.

2 Characteristic values

- Value at chip level.
- Only valid with pre-applied thermal interface material.

2.1 Buck switch

Table 7 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 0.08A$	$T_j = 25^{\circ}C$		3.2		V
Drain-source on- resistance	$R_{DS(on)}$	$V_{DS} = 15V$, $I_D = 300A$	$T_j = 25^{\circ}C$		4.8		mΩ
Drain-source on- resistance	$R_{DS(on)}$	$V_{DS} = 18V$, $I_D = 300A$	$T_j = 25^{\circ}C$		3.2 _(chip)		mΩ
			$T_j = 25^{\circ}C$		3.9		
			$T_j = 125^{\circ}C$		4.6		
			$T_j = 175^{\circ}C$		6.4		

2 Characteristic values

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Drain-source cut-off current	I_{DSS}	$V_{GS} = 0V$, $V_{DS} = 1200V$	$T_j = 25^{\circ}C$			32	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = 22V$, $V_{DS} = 0V$	$T_j = 25^{\circ}C$			400	nA
Internal gate resistance	R_g				1.5		Ω
Input capacitance	C_{iss}	$f = 1MHz$, $V_{GS} = 0V$, $V_{DS} = 25V$	$T_j = 25^{\circ}C$		20.7		nF
Output capacitance	C_{oss}				0.92		
Reverse transfer capacitance	C_{rss}				0.069		
Gate charge	Q_g	$V_{DD} = 800V$, $V_{GS} = 18V$, $I_D = 300A$	$T_j = 25^{\circ}C$		0.885		μC

Table 8 Thermal

Parameter	Symbol	Note or test condition	Value			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	R_{thJC}	per MOSFET			0.153	K/W

Table 9 Dynamic

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Turn-on delay time	$t_{d(on)}$	$R_{gon} = 1.1\Omega$, $R_{goff} = 2\Omega$, $V_{GS} = -5/18V$, $V_{DS} = 650V$, $I_D = 300A$	$T_j = 25^{\circ}C$		59		ns
			$T_j = 125^{\circ}C$		60		
			$T_j = 175^{\circ}C$		59		
Rise time	t_r		$T_j = 25^{\circ}C$		36		ns
			$T_j = 125^{\circ}C$		32		
			$T_j = 175^{\circ}C$		32		
Turn-off delay time	$t_{d(off)}$		$T_j = 25^{\circ}C$		114		ns
			$T_j = 125^{\circ}C$		140		
			$T_j = 175^{\circ}C$		148		
Fall time	t_f	$T_j = 25^{\circ}C$		43		ns	

2 Characteristic values

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Turn-on energy (per pulse)	E_{on}		$T_j = 125^{\circ}\text{C}$		65		
			$T_j = 175^{\circ}\text{C}$		64		
			$T_j = 25^{\circ}\text{C}$		4.12		
			$T_j = 125^{\circ}\text{C}$		2.54		mJ
			$T_j = 175^{\circ}\text{C}$		2.29		
Turn-off energy (per pulse)	E_{off}		$T_j = 25^{\circ}\text{C}$		6.42		mJ
			$T_j = 125^{\circ}\text{C}$		8.37		
			$T_j = 175^{\circ}\text{C}$		8.68		

2.2 Buck switch Body Diode

Table 10 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Forward voltage	V_{SD}	$V_{GS} = -5\text{V},$ $I_D = 300\text{A}$	$T_j = 25^{\circ}\text{C}$		4.44		V
			$T_j = 125^{\circ}\text{C}$		4.06		
			$T_j = 175^{\circ}\text{C}$		3.92		
DC body diode forward current	I_{SD}	$T_s = 80^{\circ}\text{C},$ $V_{GS} = -5\text{V}$	$T_j = 175^{\circ}\text{C}$			175	A

2.3 Buck diode

Table 11 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	$V_{GS} = -5\text{V},$ $I_D = 300\text{A}$	$T_j = 25^{\circ}\text{C}$		1.70		V
			$T_j = 125^{\circ}\text{C}$		2.17		
			$T_j = 175^{\circ}\text{C}$		2.59		
Reverse leakage current	I_R	$V_R = 1200\text{V}$	$T_j = 25^{\circ}\text{C}$			960	μA

Table 12 Thermal

Parameter	Symbol	Note or test condition	Value			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	R_{thJC}				0.167	K/W

Table 13 Dynamic

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Peak recovery current	I_{RM}	$R_{gon} \approx 1.1\Omega$, $R_{goff} \approx 2\Omega$, $V_{GS} = -5/18V$, $V_{DS} = 350V$, $I_D = 252A$	$T_j = 25^{\circ}C$		60		A
			$T_j = 125^{\circ}C$		64		
			$T_j = 175^{\circ}C$		64		
Reverse recovery time	t_{rr}		$T_j = 25^{\circ}C$		20		ns
			$T_j = 125^{\circ}C$		19		
			$T_j = 175^{\circ}C$		19		
Recovered charge	Q_{rr}		$T_j = 25^{\circ}C$		0.89		μC
			$T_j = 125^{\circ}C$		0.86		
			$T_j = 175^{\circ}C$		0.94		
Reverse recovered energy	E_{rec}	$T_j = 25^{\circ}C$		0.46		mJ	
		$T_j = 125^{\circ}C$		0.61			
		$T_j = 175^{\circ}C$		0.69			

2.4 Boost switch (T13/T14)

Table 14 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 0.08A$	$T_j = 25^\circ C$		3.2		V
Drain-source on- resistance	$R_{DS(on)}$	$V_{GS} = 15V$, $I_D = 300A$	$T_j = 25^\circ C$		3.8		m Ω
Drain-source on- resistance	$R_{DS(on)}$	$V_{GS} = 18V$, $I_D = 300A$	$T_j = 25^\circ C$		3.2 _(chip)		m Ω
			$T_j = 25^\circ C$		3.9		
			$T_j = 125^\circ C$		4.6		

2 Characteristic values

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
			$T_j = 175^{\circ}\text{C}$		6.4		
Drain-source cut-off current	I_{DSS}	$V_{GS} = 0\text{V},$ $V_{DS} = 1200\text{V}$	$T_j = 25^{\circ}\text{C}$			32	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = 22\text{V},$ $V_{DS} = 0\text{V}$	$T_j = 25^{\circ}\text{C}$			400	nA
Internal gate resistance	R_g				1.5		Ω
Input capacitance	C_{iss}	$f = 1\text{MHz},$ $V_{GS} = 0\text{V},$ $V_{DS} = 25\text{V}$	$T_j = 25^{\circ}\text{C}$		20.7		nF
Output capacitance	C_{oss}				0.92		nF
Reverse transfer capacitance	C_{rss}				0.069		nF
Gate charge	Q_g	$V_{DD} = 800\text{V}$ $V_{GS} = 18\text{V},$ $I_D = 300\text{A}$	$T_j = 25^{\circ}\text{C}$		0.885		μC

Table 15 Thermal

Parameter	Symbol	Note or test condition	Value			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	R_{thJC}				0.153	K/W

Table 16 Dynamic

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Turn-on delay time	$t_{d(on)}$	$R_{gon} = 1.1\Omega,$	$T_j = 25^{\circ}\text{C}$		73		ns
			$T_j = 125^{\circ}\text{C}$		65		
			$T_j = 175^{\circ}\text{C}$		64		
Rise time	t_r	$R_{goff} = 2\Omega,$ $V_{GS} = -5/18\text{V},$ $V_{DS} = 650\text{V},$	$T_j = 25^{\circ}\text{C}$		35		ns
			$T_j = 125^{\circ}\text{C}$		32		
			$T_j = 175^{\circ}\text{C}$		31		
Turn-off delay time	$t_{d(off)}$	$I_D = 300\text{A}$	$T_j = 25^{\circ}\text{C}$		124		ns
			$T_j = 125^{\circ}\text{C}$		143		
			$T_j = 175^{\circ}\text{C}$		158		

2 Characteristic values

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Fall time	t _f		T _j = 25°C		40		ns
			T _j = 125°C		43		
			T _j = 175°C		42		
Turn-on energy (per pulse)	E _{on}		T _j = 25°C		2.38		mJ
			T _j = 125°C		1.97		
			T _j = 175°C		1.64		
Turn-off energy (per pulse)	E _{off}		T _j = 25°C		8.07		mJ
			T _j = 125°C		8.51		
			T _j = 175°C		8.67		

2.5 Boost switch Body Diode

Table 17 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Forward voltage	V_{SD}	$V_{GS} = -5\text{V},$ $I_D = 300\text{A}$	$T_j = 25^{\circ}\text{C}$		4.44		V
			$T_j = 125^{\circ}\text{C}$		4.06		
			$T_j = 175^{\circ}\text{C}$		3.92		
DC body diode forward current	I_{SD}	$T_s = 80^{\circ}\text{C},$ $V_{GS} = -5\text{V}$	$T_j = 175^{\circ}\text{C}$			175	A

2.6 Boost diode (D13/D14)

Table 18 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	$I_D = 300\text{A}$	$T_j = 25^{\circ}\text{C}$		1.70		V
			$T_j = 125^{\circ}\text{C}$		2.17		
			$T_j = 175^{\circ}\text{C}$		2.59		
Reverse leakage current	I_R	$V_R = 1200\text{V}$	$T_j = 25^{\circ}\text{C}$			960	μA

Table 19 Thermal

Parameter	Symbol	Note or test condition	Value			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	R_{thJC}				0.167	K/W

Table 20 Dynamic

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Peak recovery current	I_{RM}	$R_{gon} = 1.1\Omega$, $R_{goff} = 2\Omega$, $V_{GS} = -5/18V$, $V_{DS} = 650V$, $I_D = 300A$	$T_j = 25^{\circ}C$		65		A
			$T_j = 125^{\circ}C$		78		
			$T_j = 175^{\circ}C$		94		
Reverse recovery time	t_{rr}		$T_j = 25^{\circ}C$		70		ns
			$T_j = 125^{\circ}C$		70		
			$T_j = 175^{\circ}C$		72		
Recovered charge	Q_{rr}		$T_j = 25^{\circ}C$		0.86		μC
			$T_j = 125^{\circ}C$		1.39		
			$T_j = 175^{\circ}C$		1.53		
Reverse recovered energy	E_{rec}		$T_j = 25^{\circ}C$		0.38		mJ
			$T_j = 125^{\circ}C$		0.71		
			$T_j = 175^{\circ}C$		0.78		

2.7 Thermistor

Table 21 Static

Parameter	Symbol	Note or test condition		Value			Unit
				Min.	Typ.	Max.	
Rated resistance	R		$T_j = 25^\circ C$		5		k Ω
Deviation of R100	$\Delta_{R/R}$	$R_{100} = 486\Omega$	$T_j = 100^\circ C$	-3		3	%
Power dissipation	P		$T_j = 25^\circ C$			60	mW
B-value	$B_{(25/50)}$	Tol. $\pm 1\%$			3375		K
B-value	$B_{(25/100)}$	Tol. $\pm 1\%$			3433		K

3 Characteristic diagrams

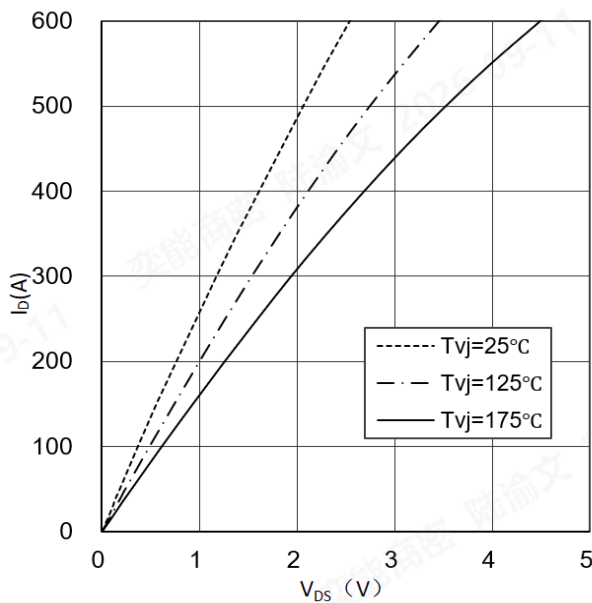
3 Characteristic diagrams

3.1 Buck switch characteristics (T11/T12)

Typical output characteristics (MOSFET)

$$I_D = f(V_{DS}),$$

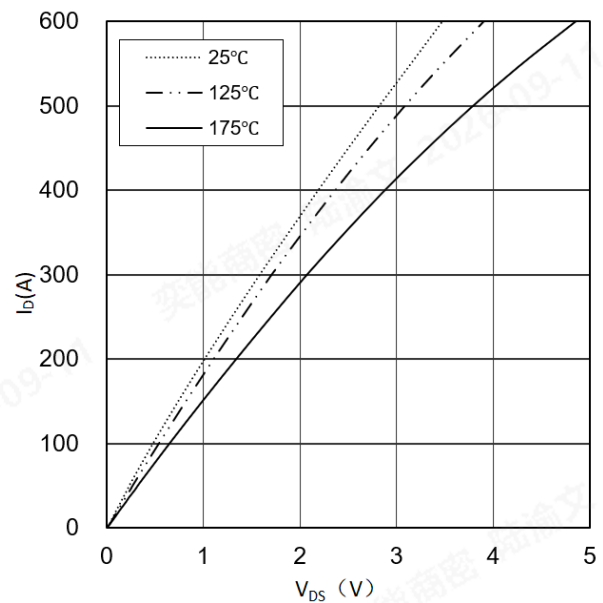
$$V_{GS} = 18V$$



Typical output characteristics (MOSFET)

$$I_D = f(V_{DS}),$$

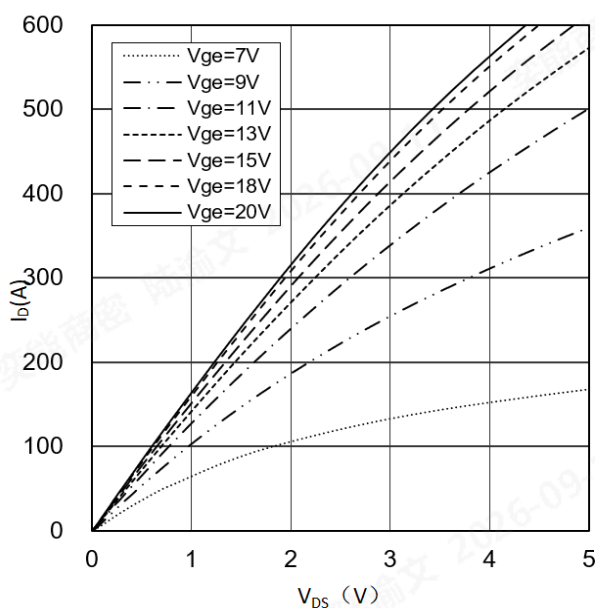
$$V_{GS} = 15V$$



Output characteristic field (typical), MOSFET

$$I_D = f(V_{DS}),$$

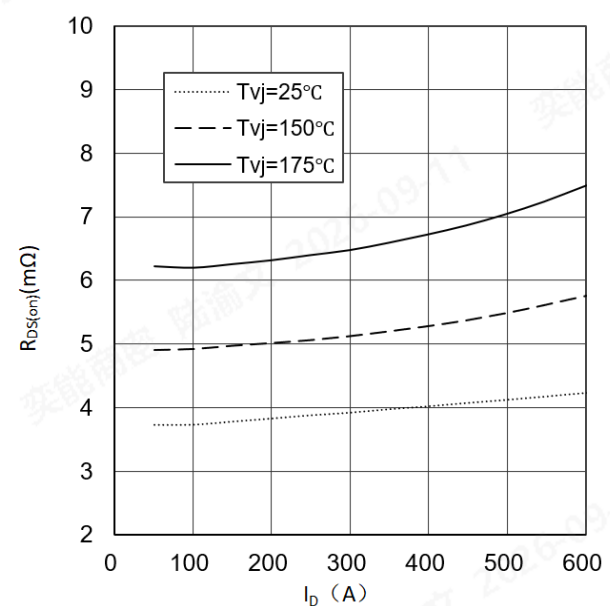
$$T_{vj} = 175^\circ\text{C}$$



Drain source on-resistance (typical), MOSFET

$$R_{DS(on)} = f(I_D),$$

$$V_{GS} = 18V$$

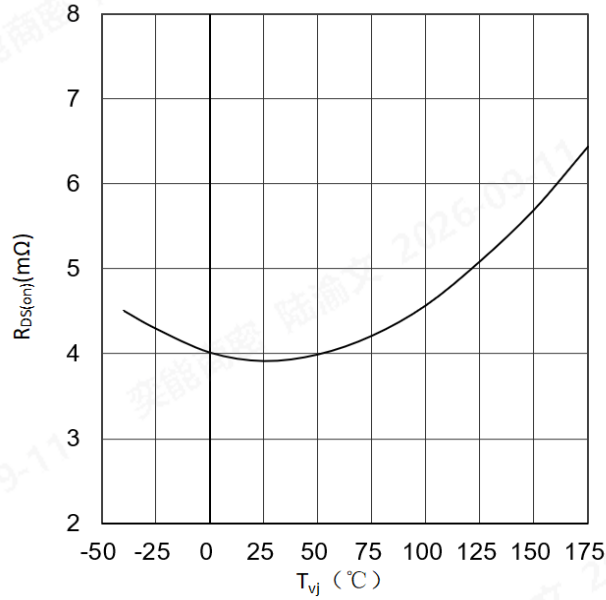


3 Characteristic diagrams

Drain source on-resistance (typical), MOSFET

$R_{DS(on)} = f(T_{vj})$,

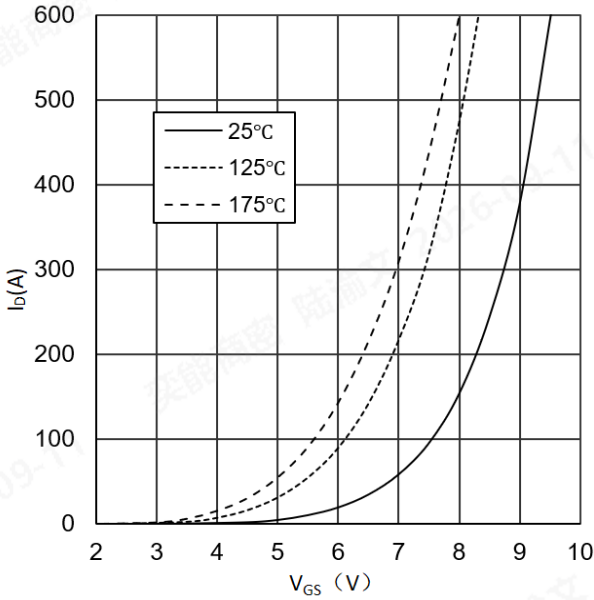
$I_D = 300A$, $V_{GS} = 18V$



Transfer characteristic (typical), MOSFET

$I_D = f(V_{GS})$,

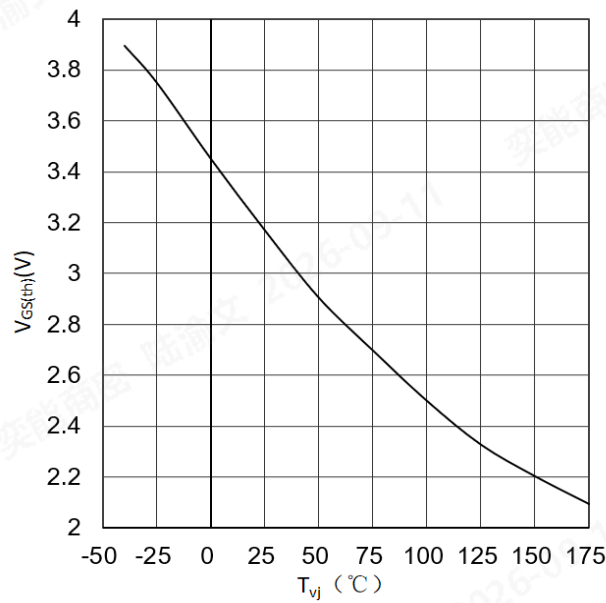
$V_{DS} = 20V$



Gate-source threshold voltage (typical), MOSFET

$V_{GS(th)} = f(T_{vj})$,

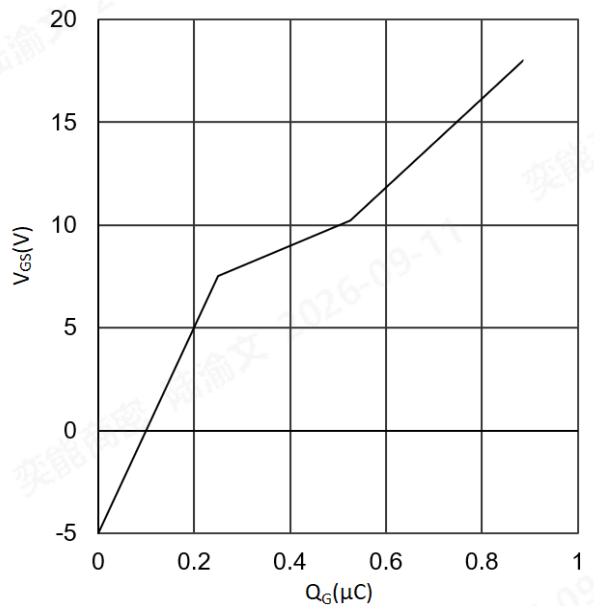
$V_{GS} = V_{DS}$, $I_D = 80mA$



Gate charge characteristic (typical), MOSFET

$V_{GS} = f(Q_G)$,

$I_D = 300A$, $V_{DS} = 650V$, $T_{vj} = 25^\circ C$

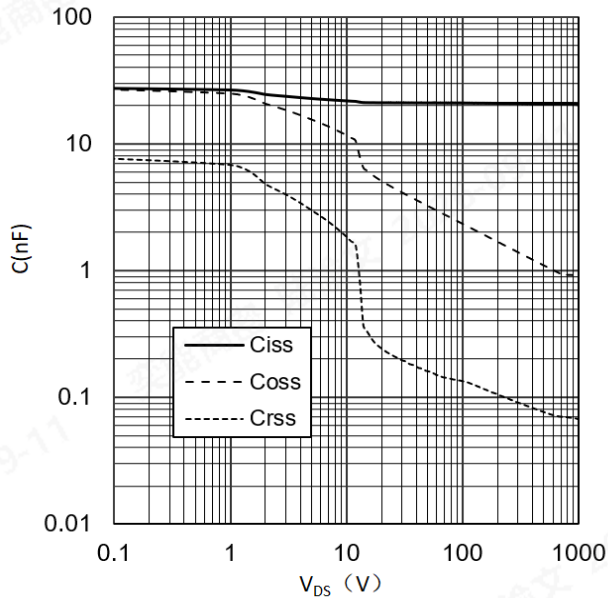


3 Characteristic diagrams

Capacity characteristic (typical), MOSFET

$$C = f(V_{DS}),$$

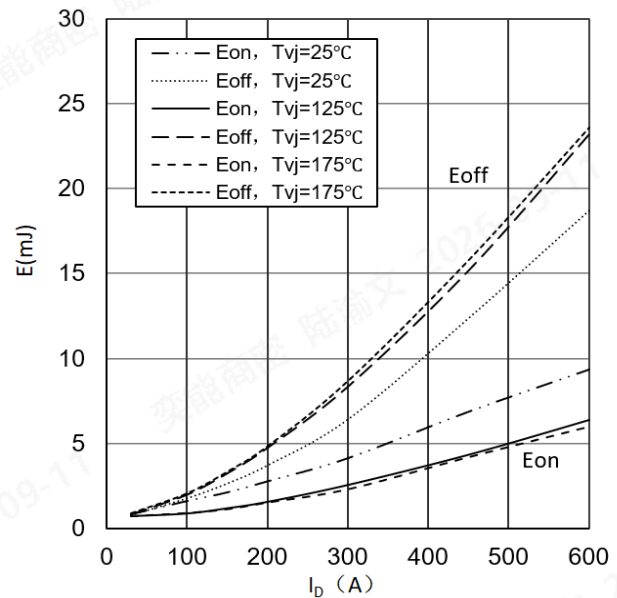
$$V_{GS} = 0V, f = 100kHz, T_{vj} = 25^{\circ}C$$



Switching losses (typical), MOSFET

$$E = f(I_D),$$

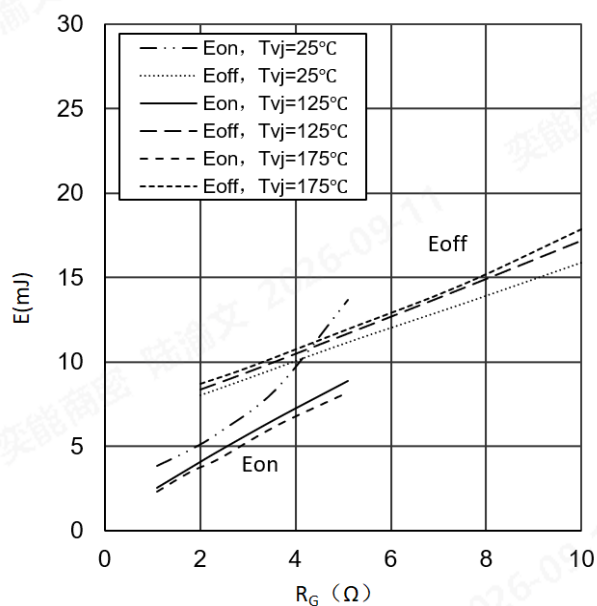
$$V_{DD} = 650V, R_{Gon} = 1.1\Omega, R_{Goff} = 2\Omega, V_{GS} = -5/18V$$



Switching losses (typical), MOSFET

$$E = f(R_G),$$

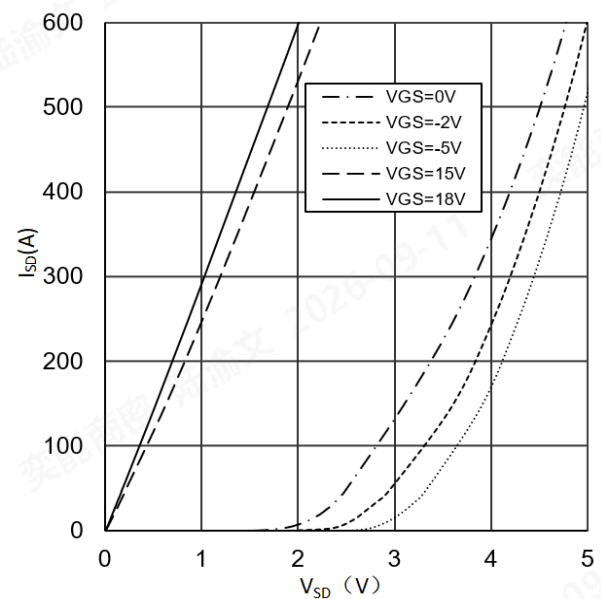
$$V_{DD} = 650V, I_D = 300A, V_{GS} = -5/18V$$



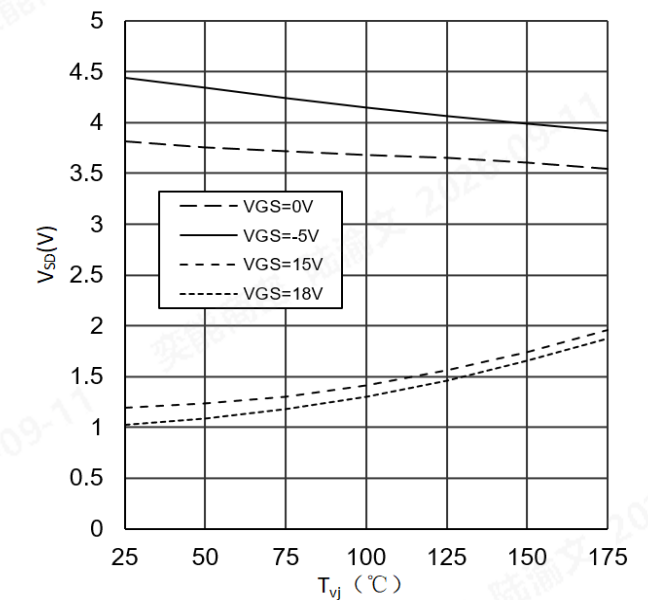
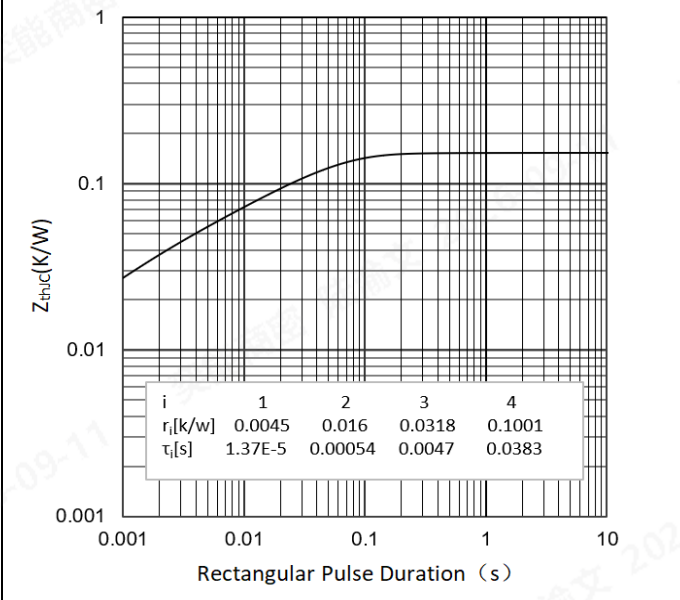
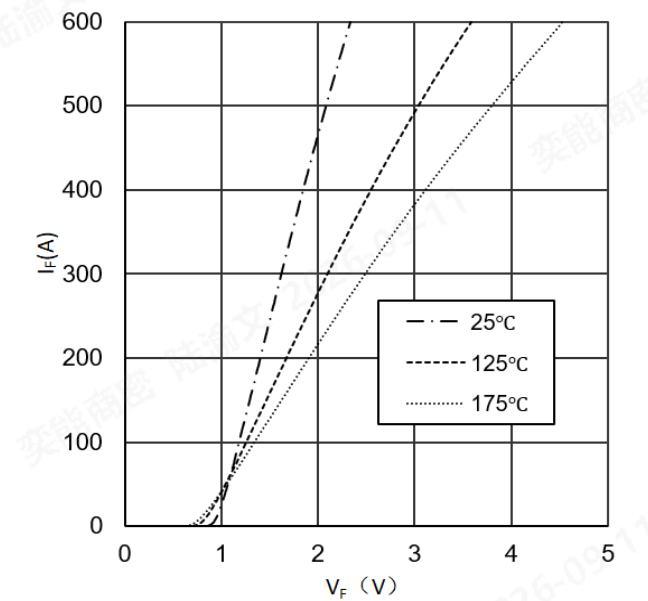
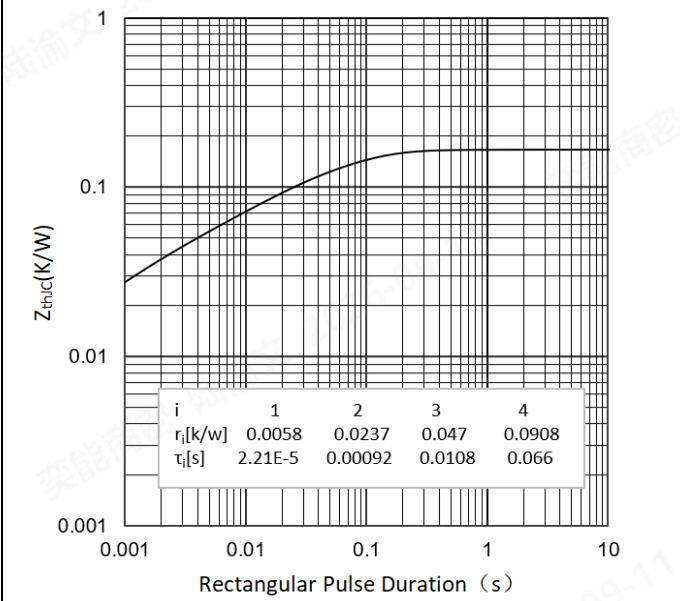
Forward characteristic body diode(typical), MOSFET

$$I_{SD} = f(V_{SD}),$$

$$T_{vj} = 25^{\circ}C$$



3.2 Buck diode characteristics

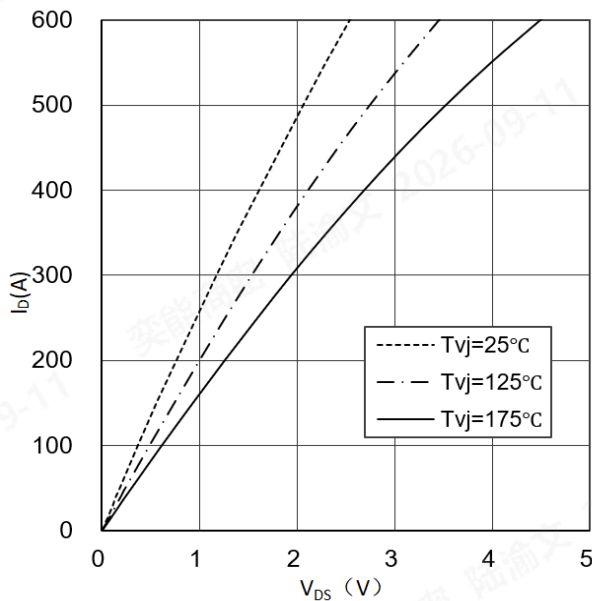
Forward voltage of body diode (typical), MOSFET $V_{DS} = f(T_{vj})$	Transient thermal impedance, MOSFET $Z_{th} = f(t)$															
	 <table><tr><th>i</th><th>1</th><th>2</th><th>3</th><th>4</th></tr><tr><td>$r_l[k/w]$</td><td>0.0045</td><td>0.016</td><td>0.0318</td><td>0.1001</td></tr><tr><td>$\tau_l[s]$</td><td>1.37E-5</td><td>0.00054</td><td>0.0047</td><td>0.0383</td></tr></table>	i	1	2	3	4	$r_l[k/w]$	0.0045	0.016	0.0318	0.1001	$\tau_l[s]$	1.37E-5	0.00054	0.0047	0.0383
i	1	2	3	4												
$r_l[k/w]$	0.0045	0.016	0.0318	0.1001												
$\tau_l[s]$	1.37E-5	0.00054	0.0047	0.0383												
Forward characteristic diode (typical), SBD $I_F = f(V_F)$, $T_{vj} = 25^{\circ}C$	Transient thermal impedance, MOSFET, T11 / T12 $Z_{th} = f(t)$															
	 <table><tr><th>i</th><th>1</th><th>2</th><th>3</th><th>4</th></tr><tr><td>$r_l[k/w]$</td><td>0.0058</td><td>0.0237</td><td>0.047</td><td>0.0908</td></tr><tr><td>$\tau_l[s]$</td><td>2.21E-5</td><td>0.00092</td><td>0.0108</td><td>0.066</td></tr></table>	i	1	2	3	4	$r_l[k/w]$	0.0058	0.0237	0.047	0.0908	$\tau_l[s]$	2.21E-5	0.00092	0.0108	0.066
i	1	2	3	4												
$r_l[k/w]$	0.0058	0.0237	0.047	0.0908												
$\tau_l[s]$	2.21E-5	0.00092	0.0108	0.066												

3.3 Boost switch characteristics (T13/T14)

Typical output characteristics (MOSFET)

$$I_D = f(V_{DS}),$$

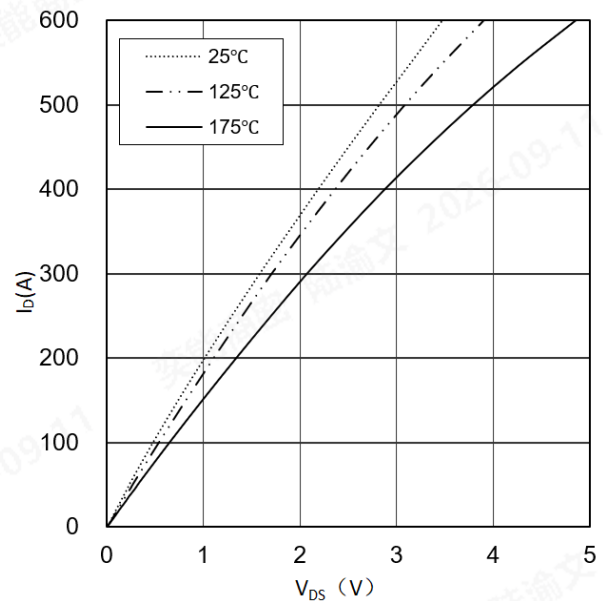
$$V_{GS} = 18V$$



Typical output characteristics (MOSFET)

$$I_D = f(V_{DS}),$$

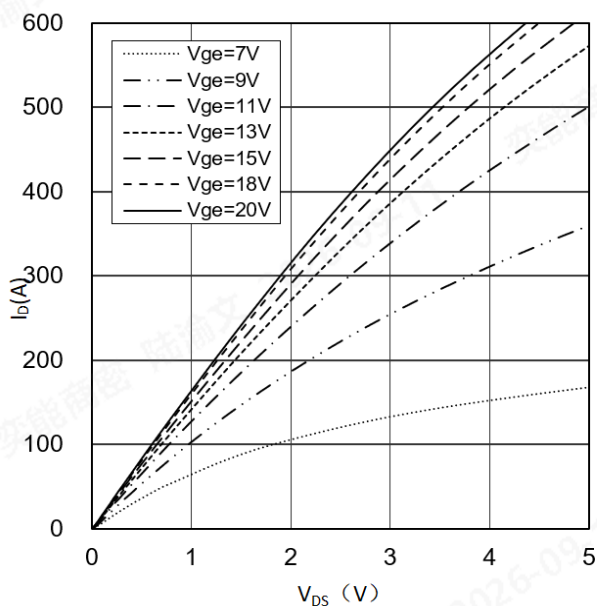
$$V_{GS} = 15V$$



Output characteristic field (typical), MOSFET

$$I_D = f(V_{DS}),$$

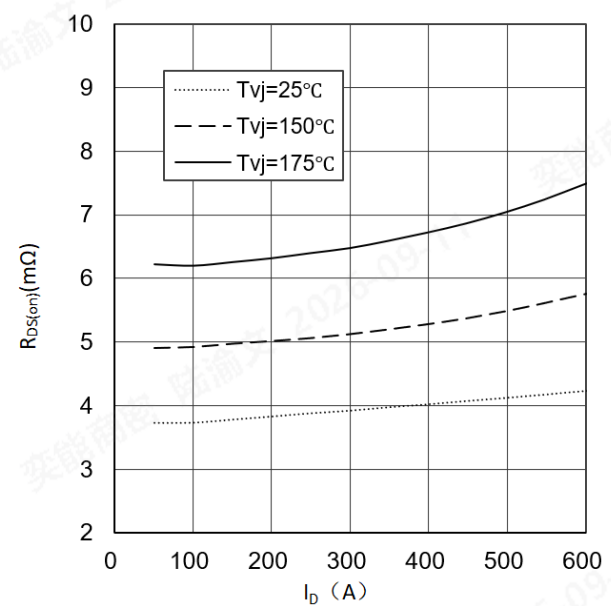
$$T_{vj} = 175^{\circ}C$$



Drain source on-resistance (typical), MOSFET

$$R_{DS(on)} = f(I_D),$$

$$V_{GS} = 18V$$

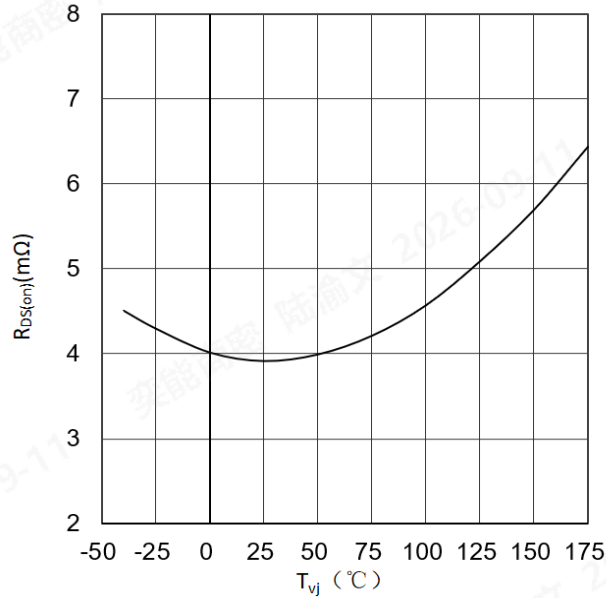


3 Characteristic diagrams

Drain source on-resistance (typical), MOSFET

$$R_{DS(on)} = f(T_{vj}),$$

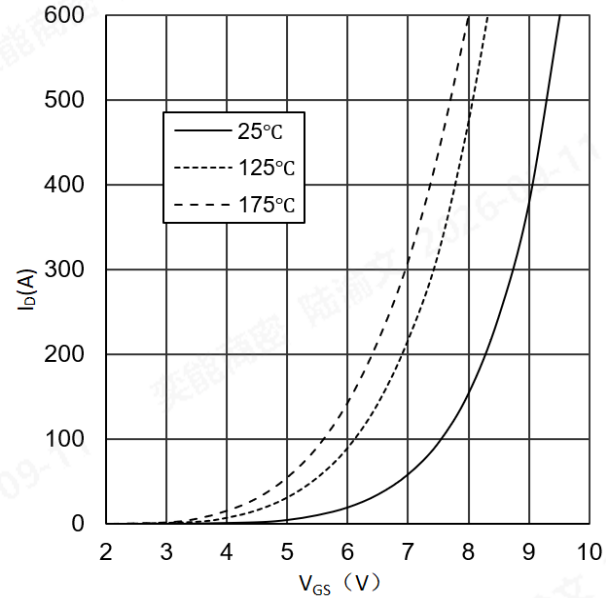
$$I_D = 300A, V_{GS} = 18V$$



Transfer characteristic (typical), MOSFET

$$I_D = f(V_{GS}),$$

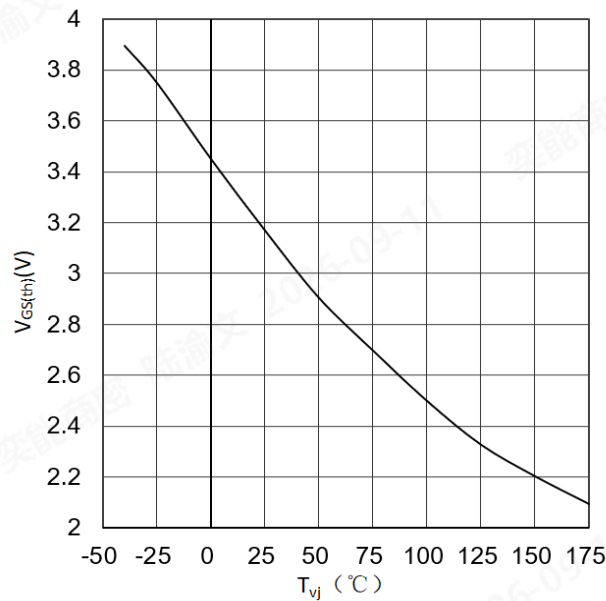
$$V_{DS} = 20V$$



Gate-source threshold voltage (typical), MOSFET

$$V_{GS(th)} = f(T_{vj}),$$

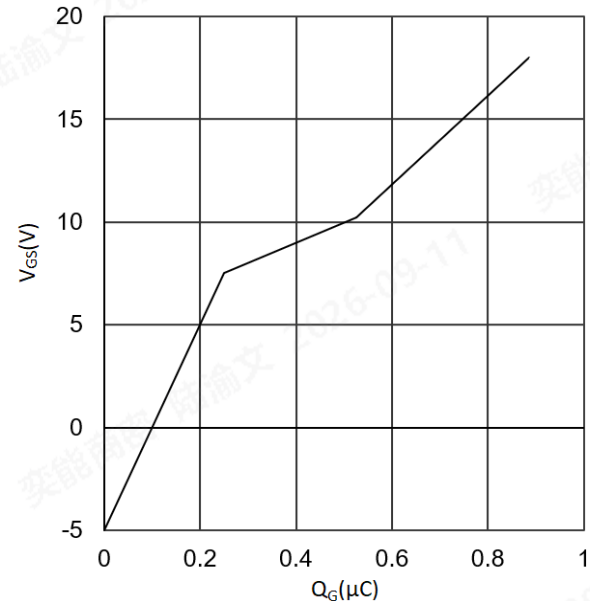
$$V_{GS} = V_{DS}, I_D = 80mA$$



Gate charge characteristic (typical), MOSFET

$$V_{GS} = f(Q_G),$$

$$I_D = 300A, V_{DS} = 650V, T_{vj} = 25^\circ C$$

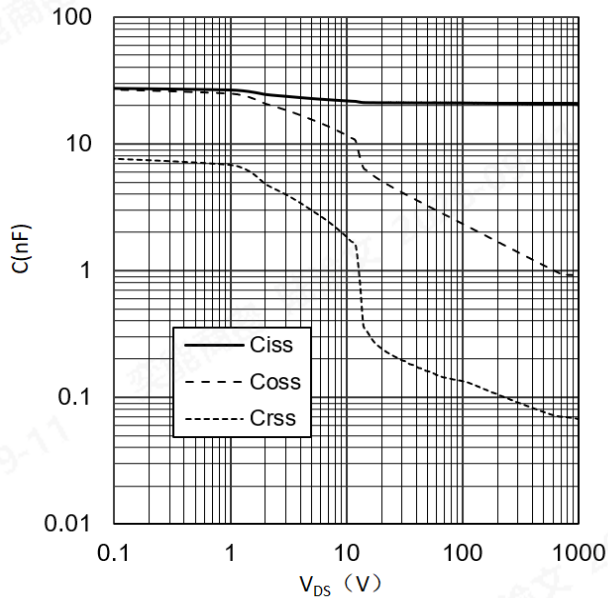


3 Characteristic diagrams

Capacity characteristic (typical), MOSFET

$$C = f(V_{DS}),$$

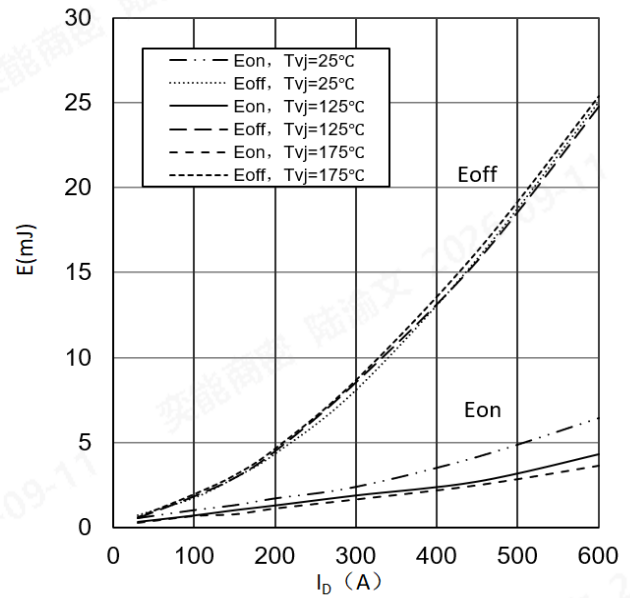
$$V_{GS} = 0V, f = 100kHz, T_{vj} = 25^{\circ}C$$



Switching losses (typical), MOSFET

$$E = f(I_D),$$

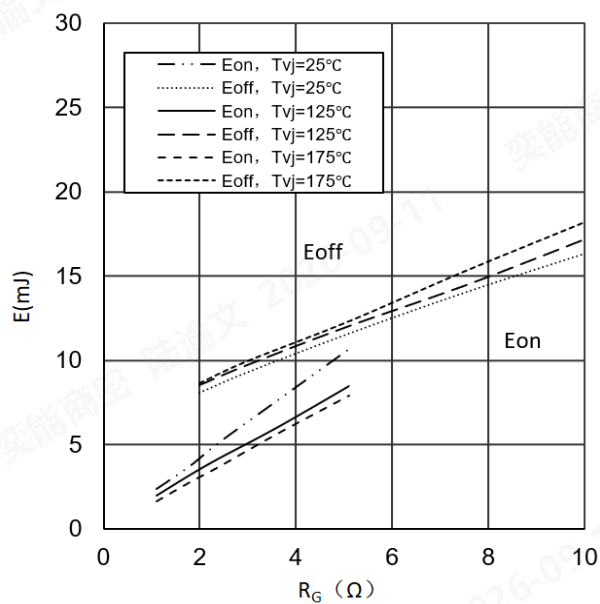
$$V_{DD} = 650V, R_{Gon} = 1.1\Omega, R_{Goff} = 2\Omega, V_{GS} = -5/18V$$



Switching losses (typical), MOSFET

$$E = f(R_G),$$

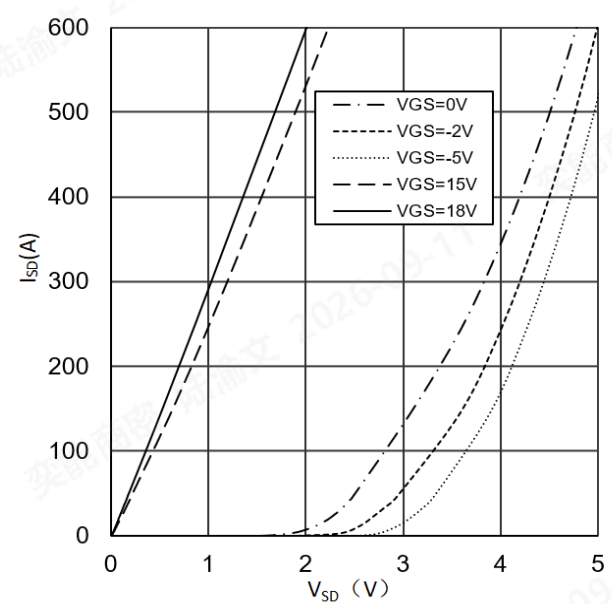
$$V_{DD} = 650V, I_D = 300A, V_{GS} = -5/18V$$



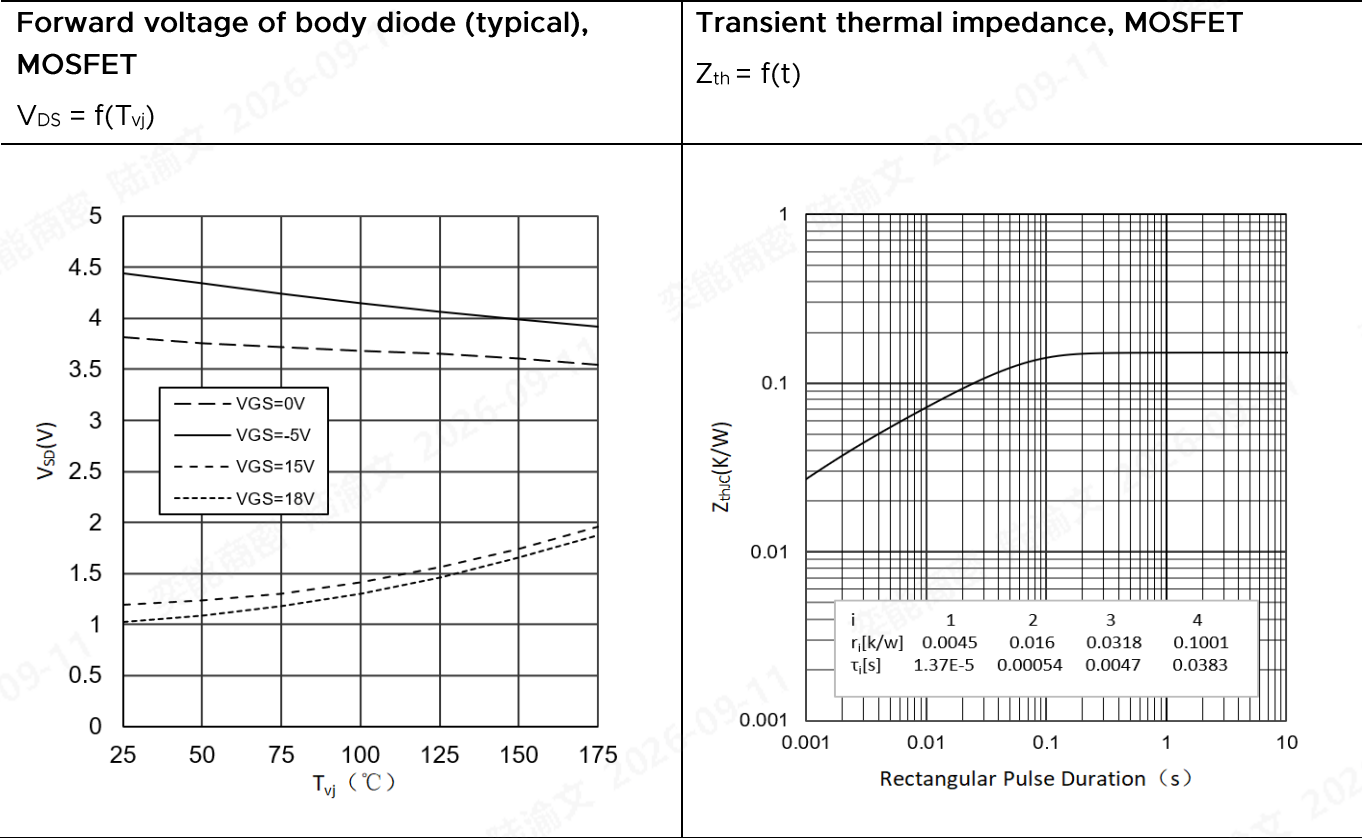
Forward characteristic body diode(typical), MOSFET

$$I_{SD} = f(V_{SD}),$$

$$T_{vj} = 25^{\circ}C$$



3 Characteristic diagrams

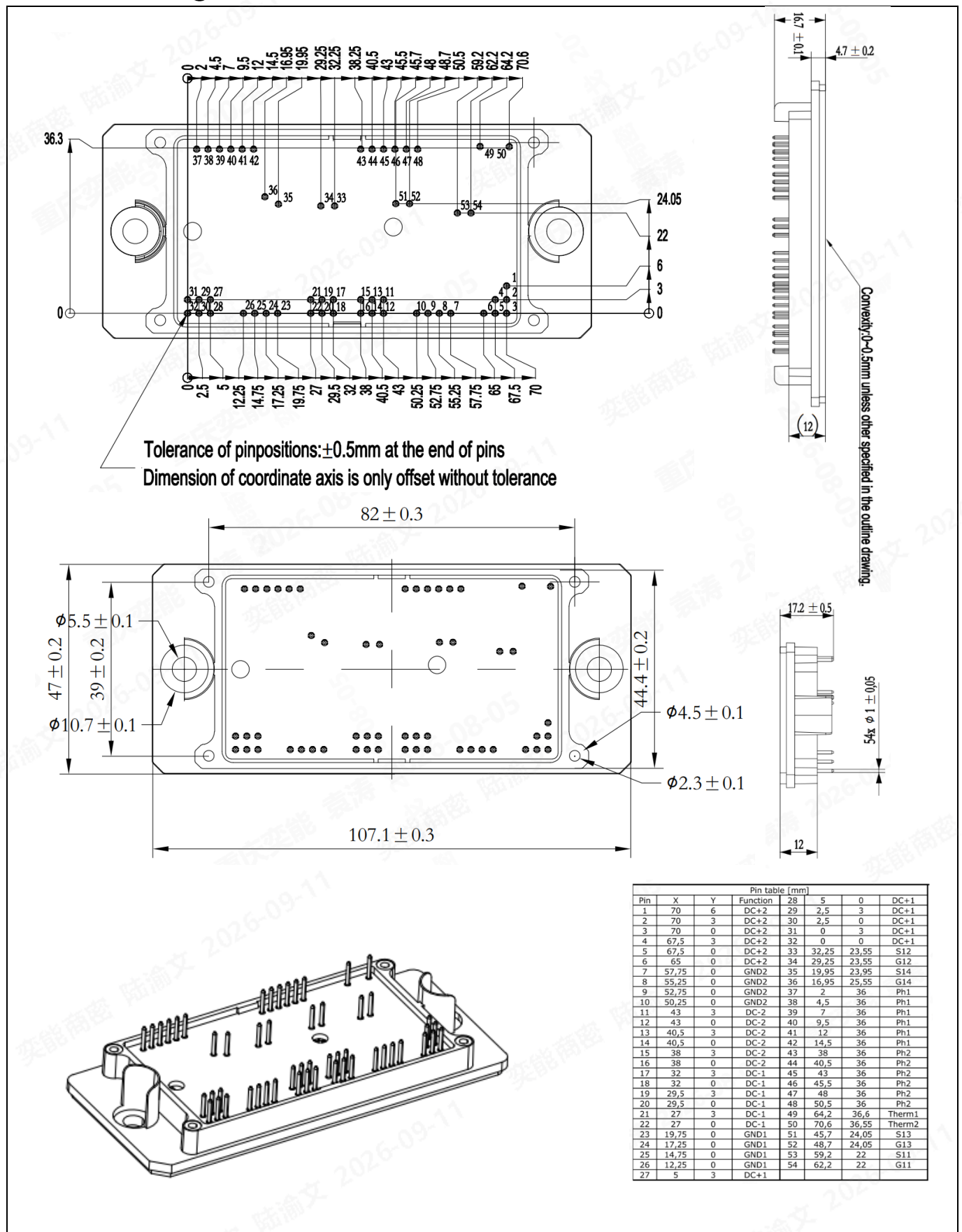


3 Characteristic diagrams

3.4 Boost diode characteristics

Forward characteristic diode (typical), SBD $I_F = f(V_F)$, $T_{vj} = 25^{\circ}\text{C}$	Transient thermal impedance, MOSFET $Z_{th} = f(t)$ <table><tr><td>i</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>r_i[k/w]</td><td>0.0058</td><td>0.0237</td><td>0.047</td><td>0.0908</td></tr><tr><td>τ_i[s]</td><td>2.21E-5</td><td>0.00092</td><td>0.0108</td><td>0.066</td></tr></table>	i	1	2	3	4	r _i [k/w]	0.0058	0.0237	0.047	0.0908	τ _i [s]	2.21E-5	0.00092	0.0108	0.066
i	1	2	3	4												
r _i [k/w]	0.0058	0.0237	0.047	0.0908												
τ _i [s]	2.21E-5	0.00092	0.0108	0.066												
NTC-Thermistor-temperature characteristic (typical) $R = f(T_{NTC})$																

4 Package outlines



Revision history

Document revision	Date of release	Description of changes
1.0	2026-08-06	Engineering version

IMPORTANT NOTICE

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