

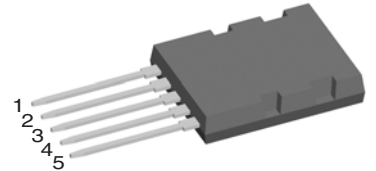
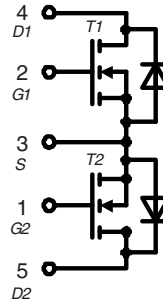
# Dual CoolMOS™ 1) Power MOSFET

Common Source Topology  
DCB isoated package

$$V_{DSS} = 600 \text{ V}$$

$$I_{D25} = 47 \text{ A}$$

$$R_{DS(on) \max} = 45 \text{ m}\Omega_{\text{MOSFET}}$$



## MOSFET T1/T2

Symbol	Conditions	Maximum Ratings
$V_{DSS}$	$T_{VJ} = 25^\circ\text{C}$	600 V
$V_{D1D2}$	$T_{VJ} = 25^\circ\text{C}$	$\pm 600$ V
$V_{GS}$		$\pm 20$ V
$I_{D25}$	$T_C = 25^\circ\text{C}$	47 A
$I_{D90}$	$T_C = 90^\circ\text{C}$	32 A
$E_{AS}$ $E_{AR}$	single pulse repetitive } $I_D = 11 \text{ A}; T_C = 25^\circ\text{C}$	1950 mJ 3 mJ

## Features

- fast CoolMOS™ 1) power MOSFET 4<sup>th</sup> generation
  - High blocking capability
  - Lowest resistance
  - Avalanche rated for unclamped inductive switching (UIS)
  - Low thermal resistance due to reduced chip thickness
- Enhanced total power density

## Applications

- AC Switch
  - power regulation of AC heating
  - light dimming
- Power factor correction (PFC) interleaved operation mode
- Push pull converter

<sup>1)</sup> CoolMOS™ is a trademark of Infineon Technologies AG.

Symbol	Conditions	Characteristic Values ( $T_{VJ} = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$R_{DSon}$	$V_{GS} = 10 \text{ V}; I_D = 44 \text{ A}$		40	45 m $\Omega$
$R_{DSon}$	total between D1 and D2 $V_{G1S} = V_{G2S} = 10 \text{ V}; I_D = 44 \text{ A}$		80	m $\Omega$
$V_{GSth}$	$V_{DS} = V_{GS}; I_D = 3 \text{ mA}$	2.5	3	3.5 V
$I_{DSS}$	$V_{DS} = V_{DSS}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		50	10 $\mu\text{A}$ $\mu\text{A}$
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			100 nA
$C_{iss}$ $C_{oss}$	} $V_{GS} = 0 \text{ V}; V_{DS} = 100 \text{ V}$ f = 1 MHz		6800 320	pF pF
$Q_g$ $Q_{gs}$ $Q_{gd}$	} $V_{GS} = 0 \text{ to } 10 \text{ V}; V_{DS} = 400 \text{ V}; I_D = 44 \text{ A}$		150 35 50	nC nC nC
$t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$	} $V_{GS} = 10 \text{ V}; V_{DS} = 400 \text{ V};$ $I_D = 44 \text{ A}; R_G = 3.3 \Omega$		30 20 100 10	ns ns ns ns
$R_{thJC}$ $R_{thCH}$	with heatsink compound		0.25	0.45 K/W K/W

IXYS reserves the right to change limits, test conditions and dimensions.

20090209b

**Source-Drain Diode**

**Characteristic Values**  
( $T_J = 25^\circ\text{C}$ , unless otherwise specified)

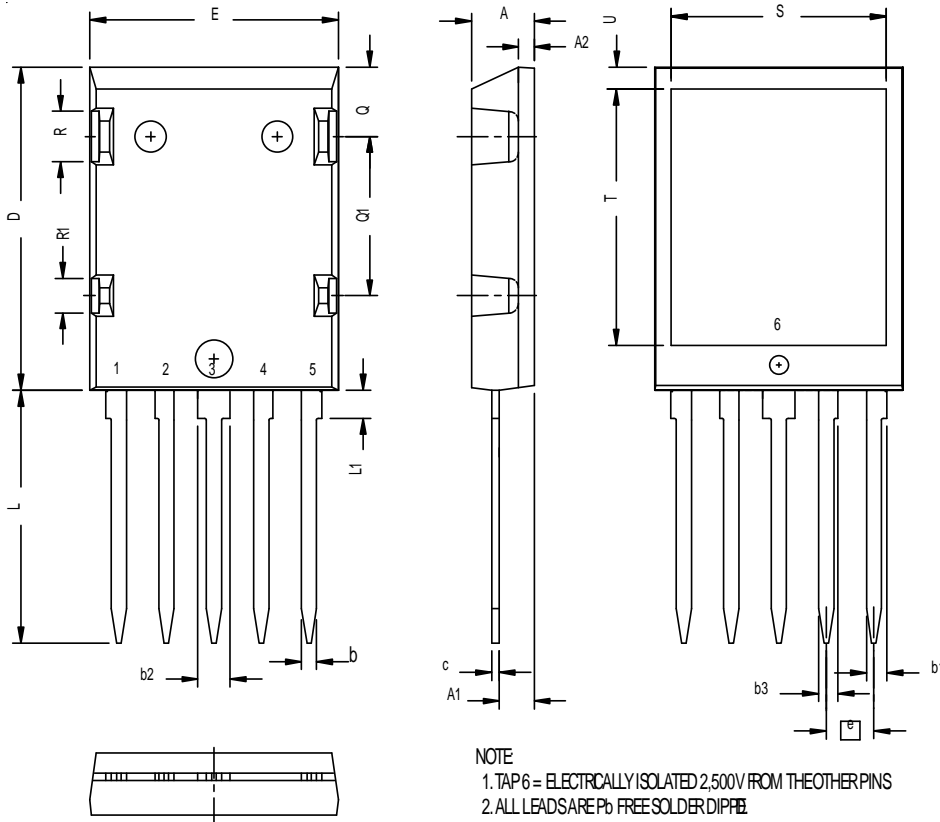
		min.	typ.	max.	
$I_S$	$V_{GS} = 0\text{ V}$			44	A
$V_{SD}$	$I_F = 44\text{ A}; V_{GS} = 0\text{ V}$		0.9	1.2	V
$t_{rr}$ $Q_{RM}$ $I_{RM}$	} $I_F = 44\text{ A}; -di/dt = 100\text{ A}/\mu\text{s}; V_R = 400\text{ V}$		600		ns
			17		$\mu\text{C}$
			60		A

**Component**

Symbol	Conditions	Maximum Ratings	
$T_{VJ}$		-55...+150	$^\circ\text{C}$
$T_{stg}$		-55...+150	$^\circ\text{C}$
$V_{ISOL}$	$I_{ISOL} \leq 1\text{ mA}; 50/60\text{ Hz}; t = 1\text{ min}$	2500	V~
$F_c$	Mounting force with clip	40 - 180	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$C_p$	coupling capacity between shorted pins and mounting tab in the case		50	pF
$d_S, d_A$	pin - pin	tbd		mm
$d_S, d_A$	pin - backside metal	tbd		mm
<b>Weight</b>			10	g

### ISOPLUS264



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.102	.118	2.59	3.00
A2	.046	.055	1.17	1.40
b	.045	.055	1.14	1.40
b1	.063	.072	1.60	1.83
b2	.100	.110	2.54	2.78
b3	.058	.068	1.47	1.73
c	.020	.029	0.51	0.74
D	1.020	1.040	25.91	26.42
E	.770	.790	19.56	20.29
e	.150 BSC		3.81 BSC	
L	.780	.820	19.81	20.83
L1	.080	.102	2.03	2.59
Q	.210	.235	5.33	5.97
Q1	.490	.513	12.46	13.03
R	.150	.180	3.81	4.57
R1	.100	.130	2.54	3.30
S	.888	.890	16.97	17.53
T	.801	.821	20.34	20.85
U	.065	.080	1.65	2.03

All curves for single MOSFET T1 or T2 only

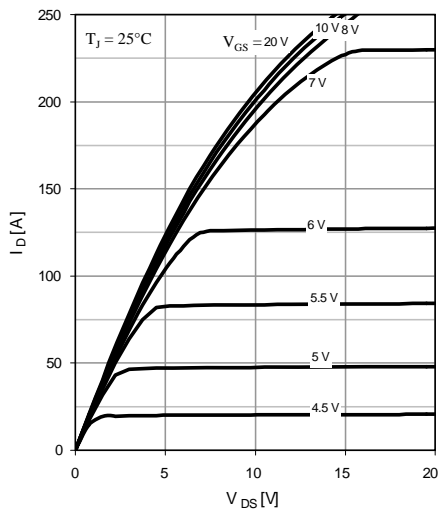


Fig. 1 Typ. output characteristics

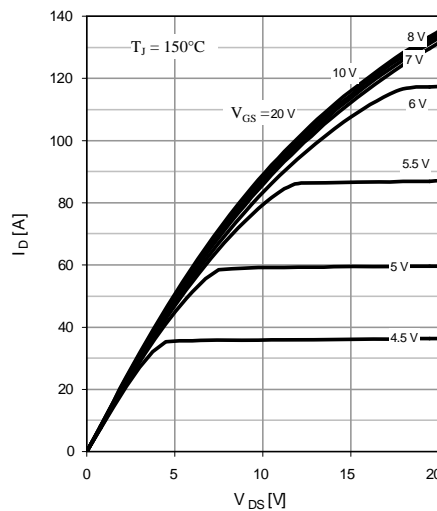


Fig. 2 Typ. output characteristics

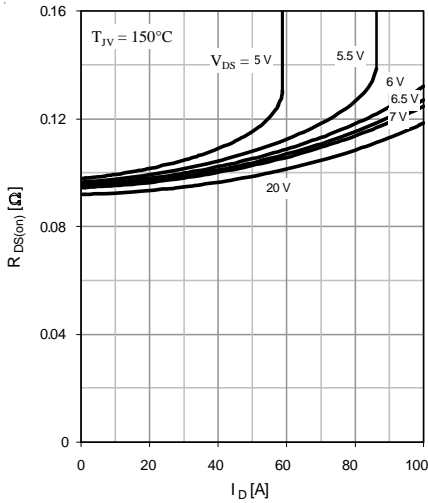


Fig. 3 Typ. drain-source on-state resistance

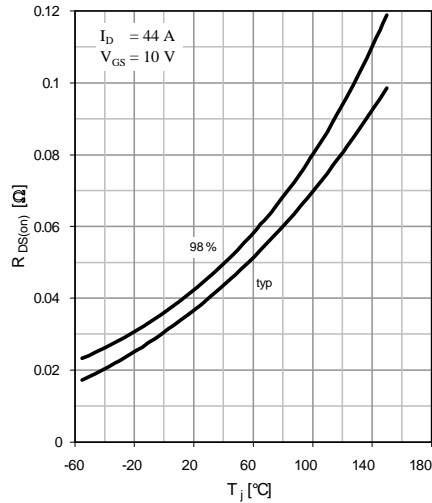


Fig. 4 Drain-source on-state resistance

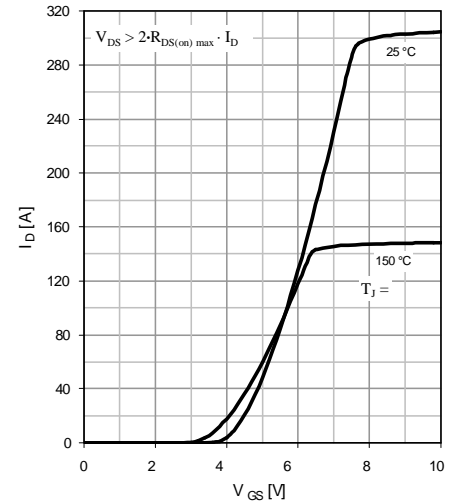


Fig. 5 Typ. transfer characteristics

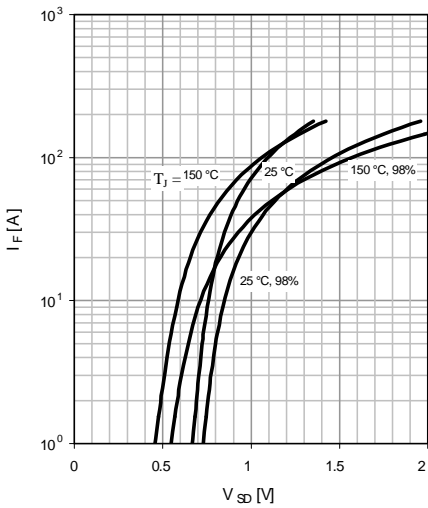


Fig. 6 Forward characteristic of reverse diode

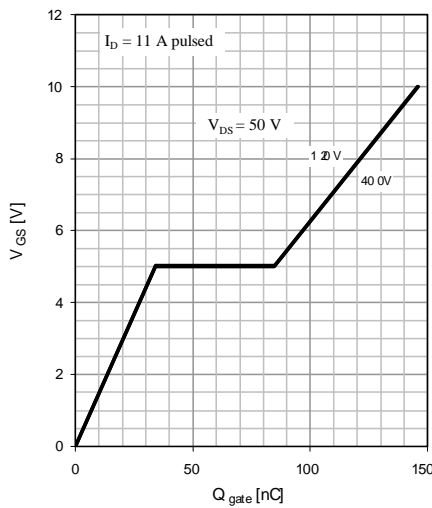


Fig. 7 Typ. gate charge

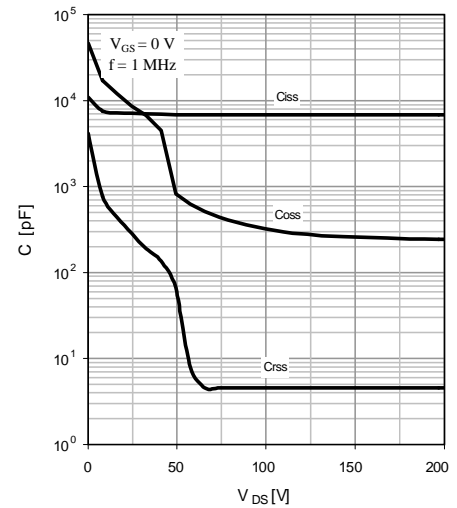


Fig. 8 Typ. capacitances

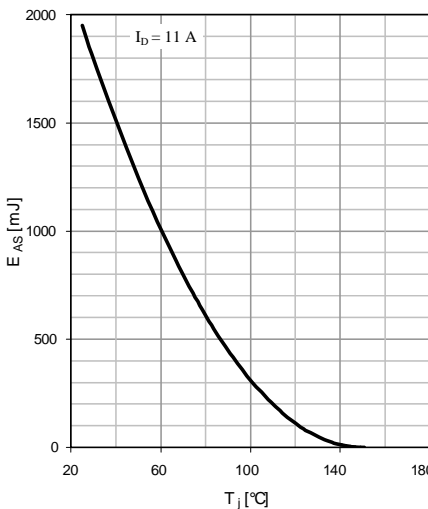


Fig. 9 Avalanche energy

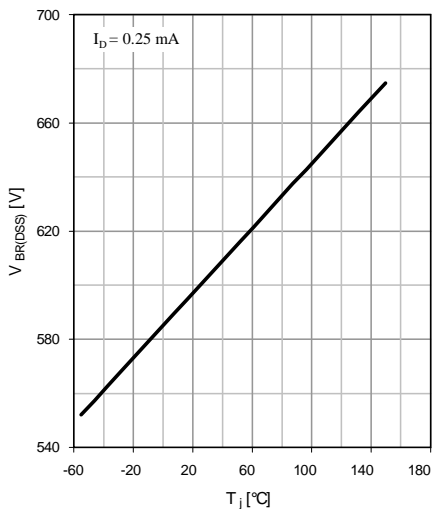


Fig. 10 Drain-source break-down voltage

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