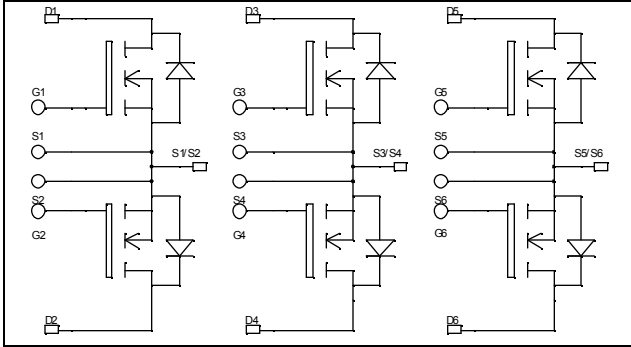


**Triple dual common source  
MOSFET Power Module**

**$V_{DSS} = 1200V$   
 $R_{DSon} = 570m\Omega$  max @  $T_j = 25^\circ C$   
 $I_D = 17A$  @  $T_c = 25^\circ C$**

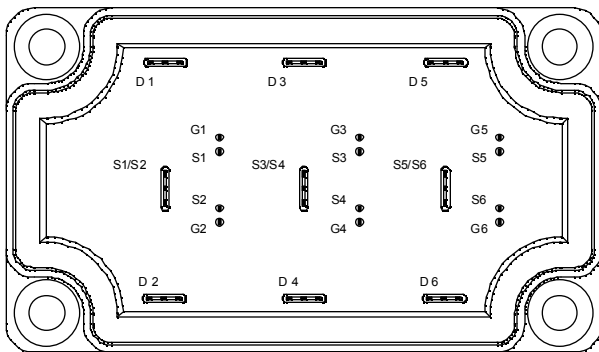


**Application**

- AC Switches
- Switched Mode Power Supplies
- Uninterruptible Power Supplies

**Features**

- Power MOS 7<sup>®</sup> MOSFETs
  - Low  $R_{DSon}$
  - Low input and Miller capacitance
  - Low gate charge
  - Avalanche energy rated
  - Very rugged
- Kelvin source for easy drive
- Very low stray inductance
  - Symmetrical design
  - Lead frames for power connections
- High level of integration



**Benefits**

- Outstanding performance at high frequency operation
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- Solderable terminals both for power and signal for easy PCB mounting
- Very low (12mm) profile
- Each leg can be easily paralleled to achieve a dual common source configuration of three times the current capability

**Absolute maximum ratings**

Symbol	Parameter	Max ratings	Unit
$V_{DSS}$	Drain - Source Breakdown Voltage	1200	V
$I_D$	Continuous Drain Current	$T_c = 25^\circ C$	17
		$T_c = 80^\circ C$	13
$I_{DM}$	Pulsed Drain current	68	
$V_{GS}$	Gate - Source Voltage	$\pm 30$	V
$R_{DSon}$	Drain - Source ON Resistance	570	$m\Omega$
$P_D$	Maximum Power Dissipation	$T_c = 25^\circ C$	390
$I_{AR}$	Avalanche current (repetitive and non repetitive)	22	A
$E_{AR}$	Repetitive Avalanche Energy	50	mJ
$E_{AS}$	Single Pulse Avalanche Energy	3000	

**CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

All ratings @  $T_j = 25^\circ\text{C}$  unless otherwise specified

## Electrical Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$BV_{DSS}$	Drain - Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	1200			V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{GS} = 0V, V_{DS} = 1200V, T_j = 25^\circ\text{C}$			100	$\mu A$
		$V_{GS} = 0V, V_{DS} = 1000V, T_j = 125^\circ\text{C}$			500	
$R_{DS(on)}$	Drain - Source on Resistance	$V_{GS} = 10V, I_D = 8.5A$			570	$m\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS} = V_{DS}, I_D = 2.5mA$	3		5	V
$I_{GSS}$	Gate - Source Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$			$\pm 100$	nA

## Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$C_{iss}$	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = 25V$ $f = 1MHz$		5155		pF
$C_{oss}$	Output Capacitance			770		
$C_{rss}$	Reverse Transfer Capacitance			130		
$Q_g$	Total gate Charge	$V_{GS} = 10V$ $V_{Bus} = 600V$ $I_D = 17A$		187		nC
$Q_{gs}$	Gate - Source Charge			24		
$Q_{gd}$	Gate - Drain Charge			120		
$T_{d(on)}$	Turn-on Delay Time	<b>Inductive switching @ <math>125^\circ\text{C}</math></b> $V_{GS} = 15V$ $V_{Bus} = 800V$ $I_D = 17A$ $R_G = 5\Omega$		20		ns
$T_r$	Rise Time			15		
$T_{d(off)}$	Turn-off Delay Time			160		
$T_f$	Fall Time			45		
$E_{on}$	Turn-on Switching Energy ❶	<b>Inductive switching @ <math>25^\circ\text{C}</math></b> $V_{GS} = 15V, V_{Bus} = 800V$ $I_D = 17A, R_G = 5\Omega$		990		$\mu J$
$E_{off}$	Turn-off Switching Energy ❷			685		
$E_{on}$	Turn-on Switching Energy ❶	<b>Inductive switching @ <math>125^\circ\text{C}</math></b> $V_{GS} = 15V, V_{Bus} = 800V$ $I_D = 17A, R_G = 5\Omega$		1565		$\mu J$
$E_{off}$	Turn-off Switching Energy ❷			857		

## Source - Drain diode ratings and characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$I_S$	Continuous Source current (Body diode)	$T_c = 25^\circ\text{C}$			17	A
		$T_c = 80^\circ\text{C}$			13	
$V_{SD}$	Diode Forward Voltage	$V_{GS} = 0V, I_S = -17A$			1.3	V
$dv/dt$	Peak Diode Recovery ❸				10	V/ns
$t_{rr}$	Reverse Recovery Time	$I_S = -17A$ $V_R = 600V$		$T_j = 25^\circ\text{C}$	1291	ns
$Q_{rr}$	Reverse Recovery Charge	$di_s/dt = 100A/\mu s$		$T_j = 25^\circ\text{C}$	29	$\mu C$

❶  $E_{on}$  includes diode reverse recovery.

❷ In accordance with JEDEC standard JESD24-1.

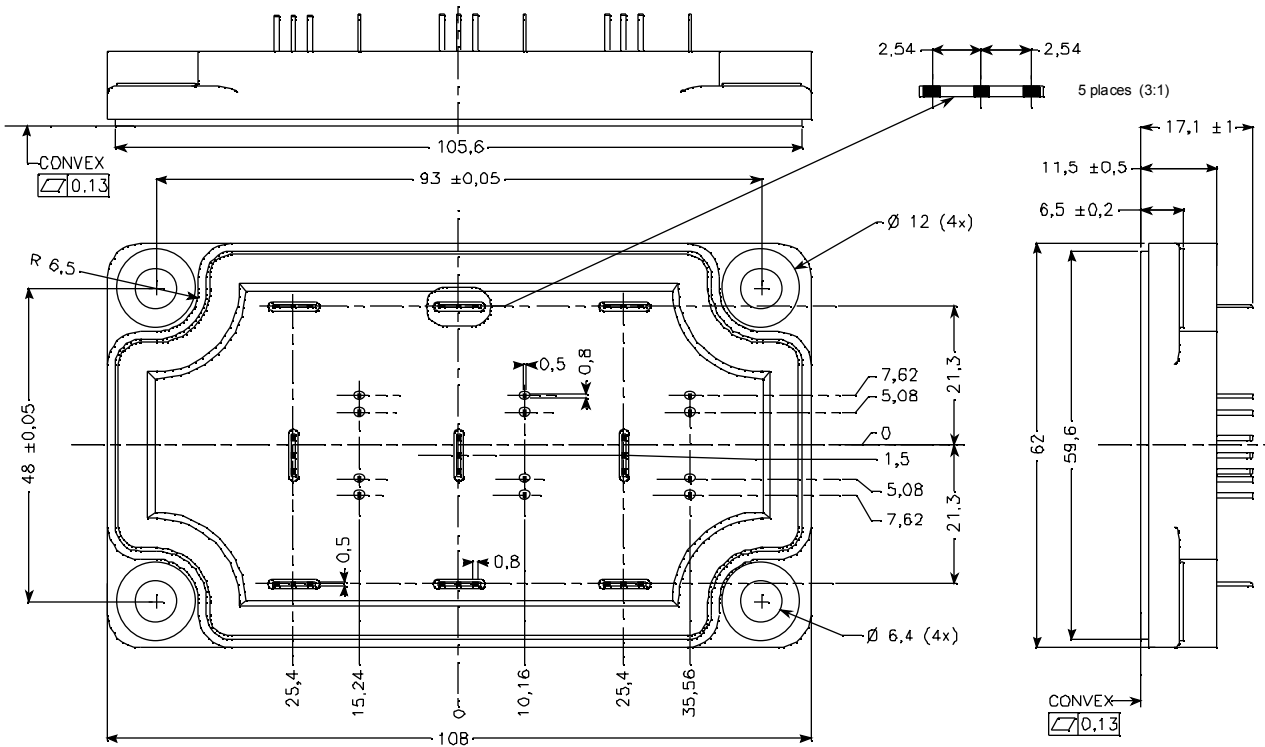
❸  $dv/dt$  numbers reflect the limitations of the circuit rather than the device itself.

$$I_S \leq -17A \quad di/dt \leq 700A/\mu s \quad V_R \leq V_{DSS} \quad T_j \leq 150^\circ\text{C}$$

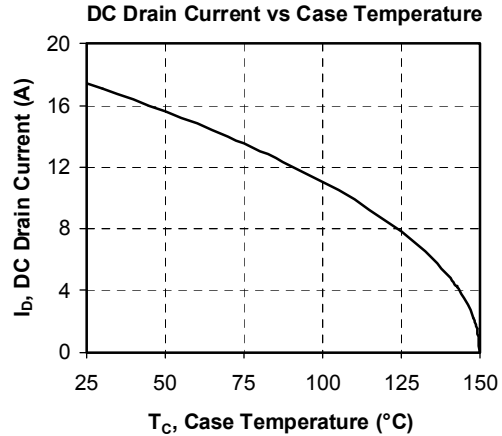
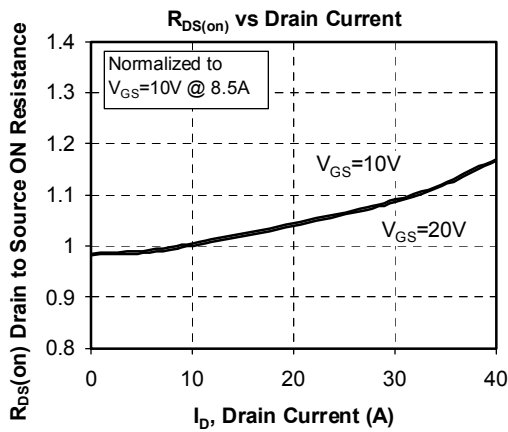
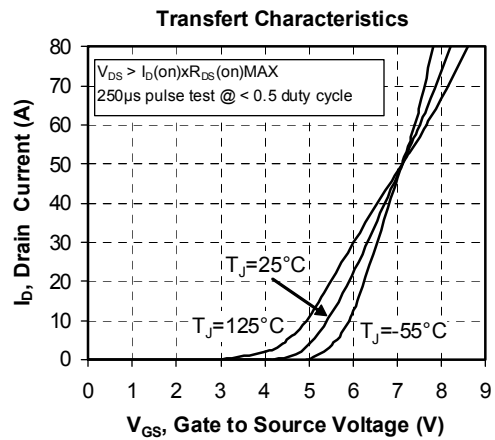
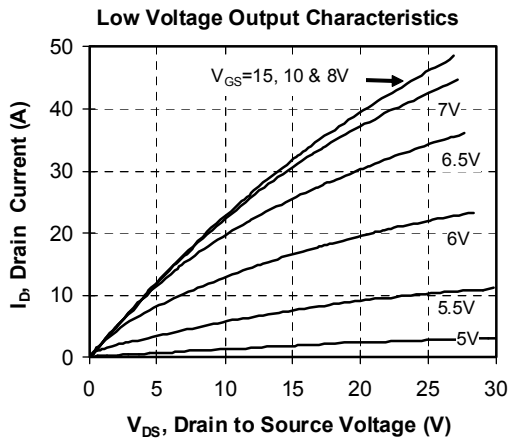
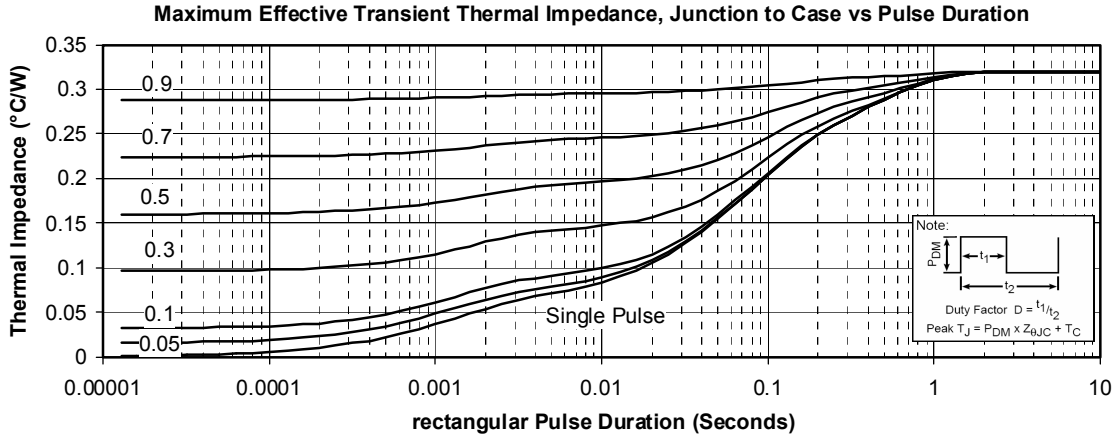
**Thermal and package characteristics**

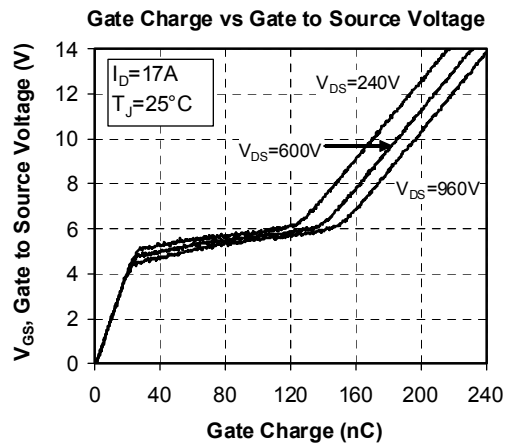
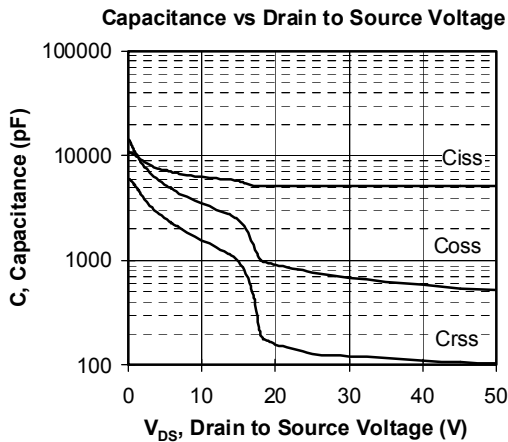
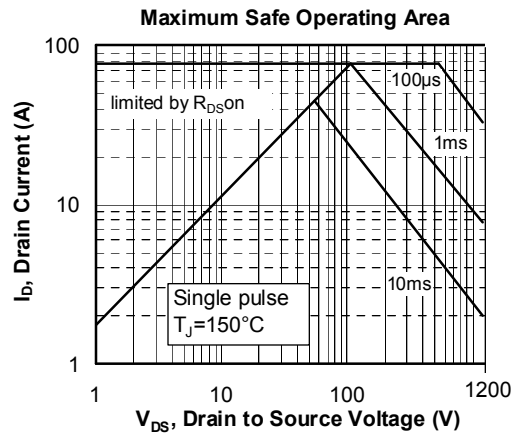
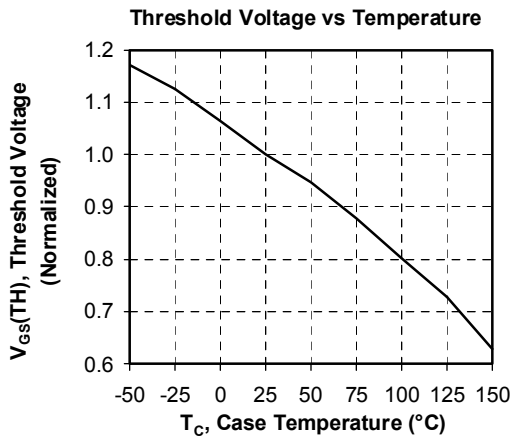
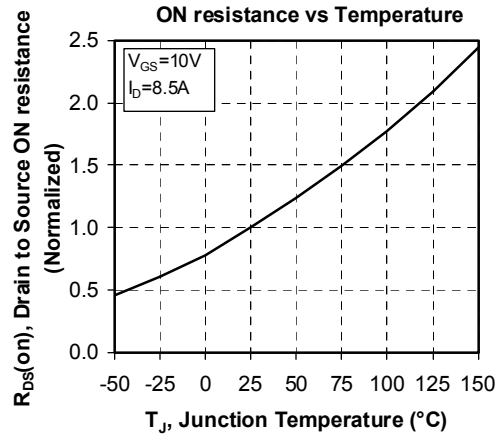
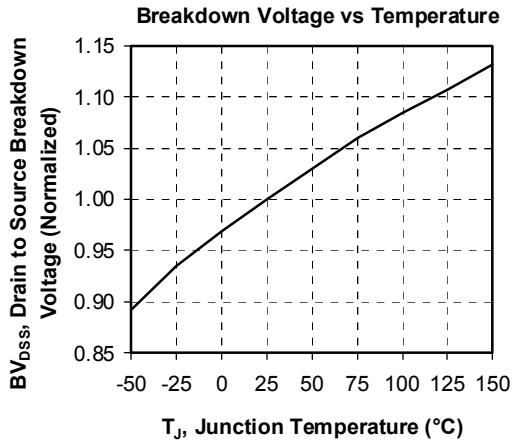
Symbol	Characteristic	IGBT	Min	Typ	Max	Unit
R <sub>thJC</sub>	Junction to Case				0.32	°C/W
V <sub>ISOL</sub>	RMS Isolation Voltage, any terminal to case t=1 min, I <sub>isol</sub> <1mA, 50/60Hz		2500			V
T <sub>J</sub>	Operating junction temperature range		-40		150	°C
T <sub>STG</sub>	Storage Temperature Range		-40		125	
T <sub>C</sub>	Operating Case Temperature		-40		100	
Torque	Mounting torque	To heatsink	M6	3	5	N.m
Wt	Package Weight				250	g

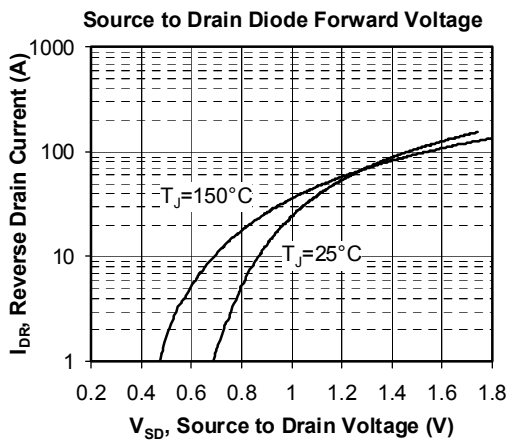
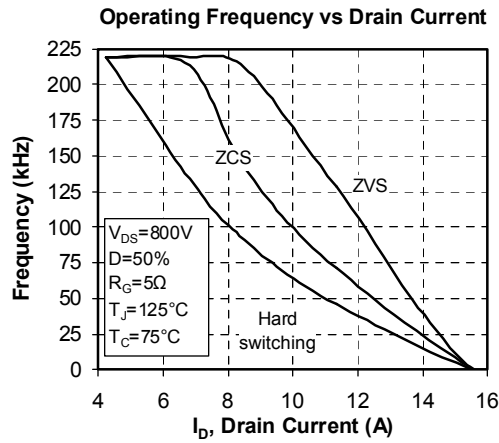
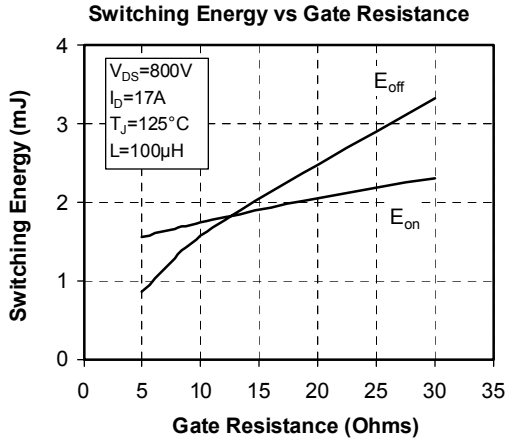
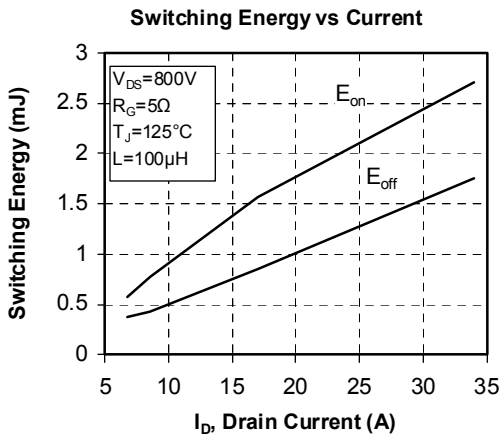
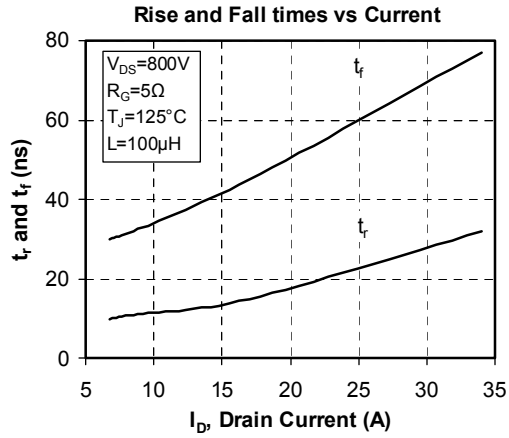
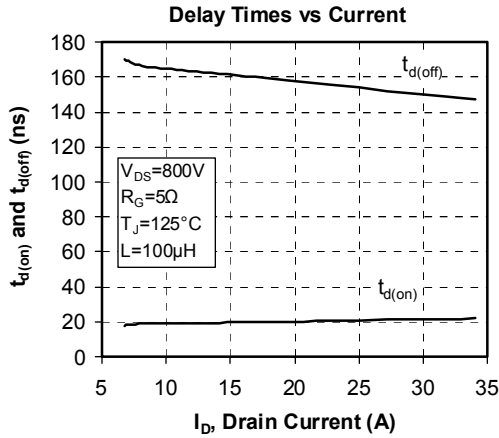
**Package outline**



**Typical Performance Curve**







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