

## Product brief

# HITFET™+

## The ultimate design flexibility

HITFET™ stands for highly integrated temperature protected MOSFET. These low-side switches offer a compelling feature set with protections against over temperature, short circuit and overload conditions as well as ESD robustness.

The HITFET™+ family is the new generation based on a new technology, enabling a significant shrink compared to the existing HITFET™ portfolio (up to 50 percent shrink). This new generation consists standard (BTS3xxxTF/EJ) and fully featured (BTF3xxxEJ/TE) low-side switches (11 mΩ to 125 mΩ) in the TO252 (DPAK-3 and DPAK-5) and TDSO-8 packages.

These two types of feature sets and packages offer a highly appropriate portfolio to match each application requirement.

With this approach, HITFET™+ is an outstanding scalable family in feature-set and current capability without any need to change PCB, within one package group, or software.

In addition to the basic standard features, the fully featured part of HITFET™+ offers improved and additional features, such as

- > Addressing broad range of switching speed requirements
- > Enhanced smart current protection feature for driving applications with high inrush current
- > Dynamic temperature protection
- > Diagnosis via STATUS pin

HITFET™+ family is automotive qualified and optimized for 12 V automotive and industrial applications.



### Key features

- > Low-side switches with integrated protection features
- > Scalable in  $R_{DS(on)}$  from 125 mΩ down to 11 mΩ
- > Adjustable slew rate control
- > Enhanced smart current protection
- > Dedicated status signal

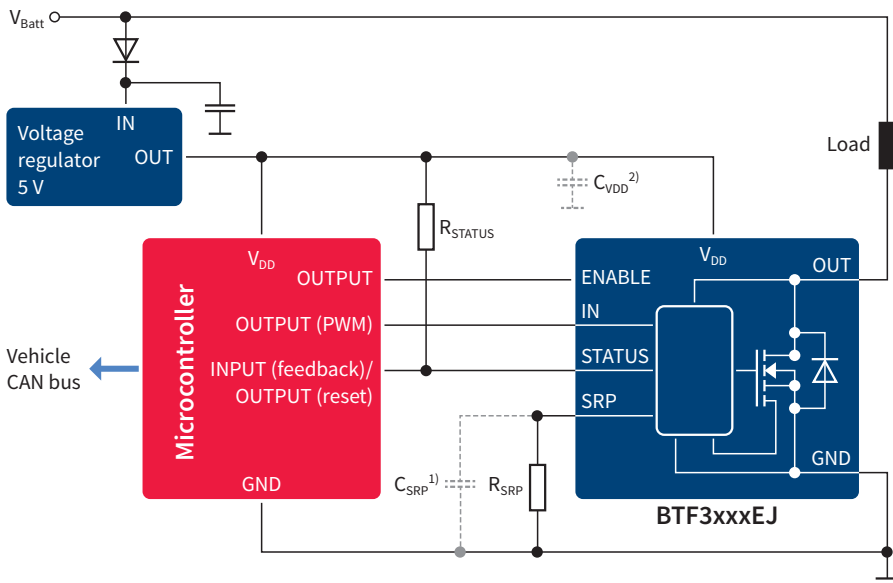
### Protection functions

- > Enhanced short circuit operation
- > New benchmark current limitation concept
- > Overvoltage protection
- > ESD protection

### Key benefits

- > High design flexibility
- > Driving applications with high switching speed requirements
- > Address applications with high inrush current
- > Improved short circuit robustness
- > Diagnosis independent from input signal (TDSO-8)

Application diagram example for the BTF3035EJ



1)  $C_{SRP-GND} < 100 \text{ pF}$  – maximum permitted parasitic capacitance at the SRP-Pin  
 2) Filter capacitor on supply, recommended 100 nF

Application focus

- > 12 V low-side loads
- > Suitable for automotive and industrial applications
- > All types of resistive, inductive and capacitive loads
- > All kind valve applications
- > Suitable for driving applications with high PWM (up to 50 kHz)

Application examples

- > Automotive and industrial applications
- > Relay driving
- > Solenoids
- > Light bulbs
- > Heater
- > Small motors
- > Fans

HITFET™+ product portfolio

	Product name	$R_{DS(on)}$ [mΩ]	$R_{DS(on)}$ (typ) @ 25°C [mΩ]	$R_{DS(on)}$ (max) @ 150°C [mΩ]	Channels	$I_{L(NOM)}$ [A]	$I_{L(lim)}$ [A]	$I_{L(LIM)-Trigger}$ [A]	PWM [kHz]	Diagnostic	Package
NEW	BTS3011TE	11	10.7	22	1	10	35	70	1	STATUS pin	TO252-5 (DPAK 5-leg)
	BTS3035EJ	35	28	70	1	5	20	-	1	STATUS pin	TDSO-8 EP
	BTS3035TF	35	30	70	1	5	20	-	1	-	TO252-3 (DPAK)
NEW	BTF3035EJ	35	28	70	1	5	14	41	20	STATUS pin	TDSO-8 EP
	BTF3050TE	50	40	100	1	3	30	-	10	through SRP pin	TO252-5 (DPAK 5-leg)
	BTS3050EJ	50	40	100	1	4	15	-	1	STATUS pin	TDSO-8 EP
	BTS3050TF	50	44	100	1	4	15	-	1	-	TO252-3 (DPAK)
NEW	BTF3050EJ	50	40	100	1	4	10	29	20	STATUS pin	TDSO-8 EP
	BTS3060TF	60	50	135	1	3	10.5	-	1	-	TO252-3 (DPAK)
	BTS3080EJ	80	64	160	1	3	10	-	1	STATUS pin	TDSO-8 EP
	BTS3080TF	80	69	160	1	3	10	-	1	-	TO252-3 (DPAK)
NEW	BTF3080EJ	80	64	160	1	3	7	18	20	STATUS pin	TDSO-8 EP
	BTS3125EJ	125	100	250	1	2	7	-	1	STATUS pin	TDSO-8 EP
	BTS3125TF	125	108	250	1	2	7	-	1	-	TO252-3 (DPAK)
NEW	BTF3125EJ	125	100	250	1	2	5	12	20	STATUS pin	TDSO-8 EP

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